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TORONTO, OCTOBER, 1940

THE CANADIAN HOSPITAL

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BRANCHES FROM COAST TO COAST

Harvey Agnew, M.D.,
Editor

The CANADIAN HOSPITAL

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The Evolution of Man

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IN times of crisis such as now confront us it may perhaps be of value to cast our eyes backwards for a few moments and to endeavour to correct both our sense of proportion and our sense of values by considering some of the many vicissitudes through which the human race has passed. Possibly there may be some lessons for us all in the long and varied record. What, then has science revealed of the past history of the human race?

The story, of course, is not as yet complete and there are many gaps in our knowledge, but the broad general outlines appear to be established beyond all reasonable doubt. We now know that many million years ago the mammals, that is, that highest group of animals of which man himself is a member, arose from a reptilian ancestor. Very soon after the mammals arose they seem to have split up into several different groups which adopted different modes of life. Some groups took to living in the sea; the majority of the groups remained as four-footed or quadrupedal animals; some groups raised themselves on their hind legs and moved about by jumping; and very fortunately for us one rather obscure group took to living up trees. And as time went by the characteristics of each group were slowly modified by the particular mode of life that it pursued.

Now the reptiles from which all these groups were descended possessed five digits on each limb and also possessed two bones both in their legs and forearms, and the possession of these structures enabled them to rotate either their hands or their feet and to use them in some degree as grasping organs. But these structures became modified in the different groups of mammals according to their different modes of life. The sea-living groups lost their limbs or had them reduced to mere vestiges; the quadrupeds lost most of their digits and suffered a more or less complete fusion of the two bones in both the leg and the forearm; the jumping animals had their hind limbs enormously developed and their forelimbs correspondingly reduced; but the obscure group that took to living in the trees retained the five digits on each extremity and the ability to rotate at least the hand, for a grasping hand and foot and a freely movable hand are very valuable advantages if one is living in a tree.

Adaptation to Environment

As the centuries rolled by the members of the tree-frequenting stock became modified in response to their special environment. First of all they began to place less reliance on their sense of smell and more reliance on their sense of sight. For an animal that lives by its nose must keep its nose fairly close to the ground and consequently practically all those animals, such as birds, that live off the ground have lost to a greater or less degree their sense of smell. Our ancestors therefore lost their snouts or at least had them greatly reduced. Their nose, no longer necessary, became smaller. Then an arboreal man-

Is Europe or America at present in the greater danger of losing the true essence of civilization and culture? The author of The Evolution of Man dares to ask a question which is a personal challenge to each reader.

An address delivered at the annual dinner of the Canadian Dietetic Association at the fifth annual convention, held in Macdonald College Ste. Anne de Bellevue, P. Q. June 14th, 1940.

ner of life led them to the retention and even further development and perfection of a grasping hand, and the possession of a grasping hand that could be stretched out in front of the body set the mouth free from its ancient function of acting as a grasping and holding organ. Members of the best circles now no longer seized and held their captives in their mouths but rather grasped them in their hands. Even this is not yet all, for the possession of a freely movable grasping hand set the nose free from its former function of acting as a tactile organ. So we feel things with our hands and not with our noses as for example dogs do. All these influences led slowly to the reduction of our ancestral snout and teeth, and the modern human face is in one sense a very poor and miserable affair, the degenerate and vestigial remnant of a once projecting and powerful snout.

The Birth of Stereoscopic Vision

Moreover, the recession of the snout opened the way for other changes. The eyes were slowly revolved around so that they both looked forward and the fields of vision overlapped instead of being directed sideways with separate fields of vision. Thus stereoscopic vision arose, and this of course made possible a more thorough and minute examination of objects. At the same time the grasping hand was able to bring objects round in front of the face and to hold them there while they were undergoing inspection. All this led to a further development of the sense of sight and, in fact, many authorities think that this in turn was largely responsible for the growth and development of the human brain. Yet the human brain would have been useless without a human grasping hand, which means without the human opposable thumb, for the usefulness of our hands really depends on the presence of a thumb which can be brought into opposition to the other digits. We are apt to emphasize the importance of the human brain but we overlook the importance of the human thumb. Yet the one without the other would have been wasted. We might imagine a cow with a high degree of intelligence. Nevertheless, with only four hoofs, a tail and two horns, she would find it very difficult to make any great use of her intelligence. She could not grasp things, especially delicate objects, and if we reflect for a moment we must realize that the only power we possess over either ourselves or our surroundings is an ability to move things and the importance of a delicate and accurate organ of grasping is very evident. All our art, our science, our industry and our trade can be analysed down to a mere moving of things and we have no other power at all over our environment.

Development of Arms

After a time some of these tree living animals adopted a different mode of progression. Up to this they all had been quadrupeds although they lived among the branches and sometimes assumed a semi-upright attitude. But now some members of the group abandoned the quadrupedal mode of progression and began to hang from the branches by their forelimbs and swing themselves through the trees. They became what we call "brachiating" apes. This new mode of life again brought various modifications of structure in its train. These animals were now truly upright in posture and in this upright attitude their tails were no longer useful as organs of balance, and in order to help in supporting their viscera they were obliged to tuck their tails between their legs and to hold them firmly there. Consequently their tails degenerated and have disappeared.

In addition to this, their mode of life led to a great development of their forelimbs and to a retrogression of their hind ones. More important still it led to a retrogression of the thumb, for though a grasping hand is very useful if we wish to run on all fours along the top of a branch it is not so useful if we hang by our arms from the branch. In the latter case we simply use our other digits as a hook to hang by and the thumb serves no purpose. In fact, all our cousins, the gorilla, chimpanzee, orang and gibbon, have followed this brachiating habit too long and have become over-specialized; their arms are now too long, their legs inconveniently short and weak and their thumbs have degenerated. It is very doubtful whether any of these species could now succeed in living permanently on the ground.

But again fortunately for us, somewhere or somehow our ancestors were compelled by some series of accidents, perhaps by the trees in some area dying out owing to drought and slow climatic changes, to come down out of the trees and live on the ground, and this important step was taken before they had become over-specialized for an arboreal manner of life. We see then that a series of accidents, if they may be called accidents, led to man being at once an extremely primitive and the most highly developed and advanced animal in the world. He retained the primitive hand and above all the thumb but he developed the most highly evolved and complex brain, and his peculiar position is due to the strange combination of these features.

The Lessons of Anthropology

Such in broad outline is the picture that modern anthropology has unfolded before us. What lessons can we learn from it? First, there is the very general lesson that the human brain developed in conjunction with the human hand and the human eye. In our modern systems of education it seems that we have lost sight of these facts and possibly we are concentrating too much on book and memory work and not enough on technical training and development of our powers of observation.

Then, coming to the special problems of the present day, are there not other lessons for us in the story? Is it not plainly written that the way of progress and ultimate accomplishment has not been the way of tenaciously holding on to an agreeable and comfortable environment? We can in imagination go back to the time when our ancestors were compelled to abandon the trees and live on the ground and if our ancestors then did reason at all we can picture the gloomy forebodings and regrets, the hysterical fears and panic-prompted remedies that were suggested. All that had been accomplished in the past seemed to be crumbling into ruin. All the skill and culture gained during long centuries of life amid the tree tops seemed to be wasted. Some of our relatives did succeed in removing themselves to places where their wonted environment persisted on unchanged and how they must have pitied those whom they left behind! But the descendants of those relatives are still in the tree tops and the descendants of those left behind to face the grim and terrible change of environment have become the worldwide race of man.

The Lessons of History

Is not this lesson eloquently repeated in the pages of human history? Again and again nations and empires have arisen and built for themselves a comfortable and agreeable physical environment and once they have lived in that environment for a time they will surrender everything rather than forego their agreeable surroundings. Of course they conceal their surrender in high sounding and plausible political maxims and their surrender is often so gradual and insidious that it almost passes unnoticed, but their surrender is none the less real. They are afraid of anything that threatens to take them out of their comfortable environment. In history books all this is differently expressed and they usually say that luxury made the people soft. In such a manner fell Babylon, Persia, Greece and Rome.

Are we sure that the people of North America, or at least a large part of them are free from this danger to-day? The civilized world is faced by a terrible and very disagreeable danger. We can either stand up to that danger and do our share in combating and overcoming it, or we can pity our poor European relatives who have to face it and congratulate ourselves that here at least our comfortable physical environment still endures. Which is the way of true progress and true civilization? Are we afraid of leaving our agreeable surroundings? Are we really surrendering something of infinitely greater importance so that our bodies may be comfortable and we can have and enjoy physical plenty and ease? *Is Europe or America at present in the greater danger of losing the true essence of civilization and culture*?

We can only really lose it by being untrue to it ourselves. For civilization and true culture do not consist of the number of our telephones, our miles of railroad or our cubic feet of concrete. True civilization, like the Kingdom of God, is within us and cannot be destroyed by shot and shell. It is only destroyed when men put a higher valuation on their sensual pleasures and bodily comforts than on the freedom of their souls. I am not condoning or excusing war, nor am I advocating that men should hastily rush into war, but we can avoid war *from wrong motives* and thereby incur a far worse evil. It may be sometimes very necessary that we should be jolted out of our comfortable environment and we may be too anxious to cling to our comfort.

The Moral Aspect

Moreover in one respect I think that the picture unfolded by science is incomplete and therefore misleading. Science deals with the investigation of material things; that is her business, and she has no concern with other matters. Accordingly, our overconcern with the scientific picture of evolution has led to a neglect of the moral aspect of the process. Science has for many years preached a doctrine of evolution by "survival of the fittest" in a brutal and materialistic struggle for existence. Unfortunately the Germans believe that doctrine wholeheartedly, and modern science cannot, I think, escape some of the responsibility for the present world crisis. We English speaking peoples have professed a sort of belief in the doctrine, but we have never given it our whole and undivided allegiance. We still feel instinctively that it does not represent the whole truth.

Nevertheless our modern passion for science produced a neglect of moral and spiritual truths. The world according to science was just a complex of competing men or groups of men, and we accepted this doctrine too easily, perhaps because it consorted with our nationalistic pride. Is not this one of the main causes of our present sorrows?

The tragedy of the present situation is that it might have been prevented. If all the nations had been willing to abandon their stupid, selfish and unchristian nationalism or isolationism, or whatever we may choose to call it, and had co-operated heartily for the maintenance of peace and world respect for law and order, the present disaster might never have occurred. Please God we shall learn our lesson, and when the present conflict is over we shall have learned to recognize that all men are bound together in ties of mutual dependence and responsibility. Our past mistakes may, I fear, yet cost us, and by "us" I mean the people of North America, a price in money and in blood and tears that far exceeds what we should have had to pay in implementing our recognition of the brotherhood of Man.

First Inter-American Institute for Hospital Administrators to be Held in Puerto Rico

The first inter-American institute for hospital administrators will be held from December 1st to the 13th in the beautiful city of San Juan in Puerto Rico. This institute, designed to bring hospital administrators of North, Central and South America together for the interchange of ideas and for instruction, has been under contemplation for some time by the American College of Hospital Administrators, the original dates having been postponed because of the outbreak of war. Co-operating with the American College of Hospital Administrators in this institute will be the University of Puerto Rico, the Insular Department of Health, the Puerto Rico Medical Association, the School of Tropical Medicine and other bodies. Dr. E. Garrido Morales, the Commissioner of Health of Puerto Rico, is director of the institute, and Mr. Gerhard Hartman, the executive secretary of the American College of Hospital Administators, is associate director. Mr. Felix Lamela, administrator of the University Hospital, School of Tropical Medicine, and well known to all who attend American Hospital Association conventions, is secretary-treasurer.

An excellent faculty for the institute has been arranged and a wide variety of subjects will make up the programme. Field trips will include several of the fine, newly constructed governmental hospitals. Among those who will give instruction will be Dr. Arthur C. Bachmeyer, director of the University of Chicago Clinics, president of the American College of Hospital Administrators and Mr. James A. Hamilton of New Haven, Conn., immediate past president.

Past Performance — Present Needs — Future Possibilities

Vital Factors Considered in Planning Reconstruction of Belleville General Hospital

By JAMES GOVAN, M.R.A.I.C., Architect, and GORDON FRIESEN, Administrator

THE history of the Belleville General Hospital is unique inasmuch as it is the first Canadian institution of its kind to be built, owned and operated by an organization of women.

The main building and east wing were built between 1884 and 1886 by the Women's Christian Association and opened in July, 1886, as a combined hospital and home for the aged. At that time it was the only hospital between Kingston and Toronto. In 1900 the east wing, which had been occupied as the home for the friendless, was remodelled for hospital purposes. The wing to the south was completed in 1911 and at the same time the boiler room, with laundry over it, was built, and the east wing was made over into a nurses' residence. The nurses' residence (No. 1 on Fig. 3) was built in 1928. Prior to that date, in 1922, men were included on the Board. Since 1930, although the ownership still rests with the W.C.A., the Board includes representatives of the City, the County and the Medical Society.

Mr. Govan is of Govan, Ferguson and Lindsay Architects.

The problems that confronted the Board of Governors of this hospital during recent years are not peculiar to it alone, but the steps taken to solve them may point a way out of difficulties facing the management of other institutions in somewhat similar circumstances.

The present chairman is Mr. Mackenzie Robertson.

The present architects were requested to outline a programme of immediate and future development in May, 1938. Prior to that time various schemes had been under discussion, one of which is outlined in Fig. 4.

Our first decision had to be "are the existing buildings worth considering as part of the better hospital to be?" And linked to the query, "Would it not be advisable to get another site and build an entirely new institution?"

As the old building had accommodation for 92 patients, plus babies, (often greatly exceeded), it was obvious that it would take at least from $250,000 to $300,000 merely to replace the existing accommodation without any additional beds. As such a programme could not be financed, the problem was confined to the provision of as much new space as was necessary to take care of immediate requirements and to do so in a manner which would form the nucleus of larger future extensions that might replace some of the present oldest construction.

Meantime it was also necessary to remodel considerable portions of these existing buildings to adapt them for altered use and make them safer and more in keeping with present day requirements.

The most urgent need was for more nurses' accommodation. As the then nurses' residence (No. 1 on Fig. 3) was destined to be absorbed in the future main buildings, and adjoining building, formerly a children's shelter, was taken over and remodelled. By so doing sufficient land was obtained to provide space for future expansion to the west and south.

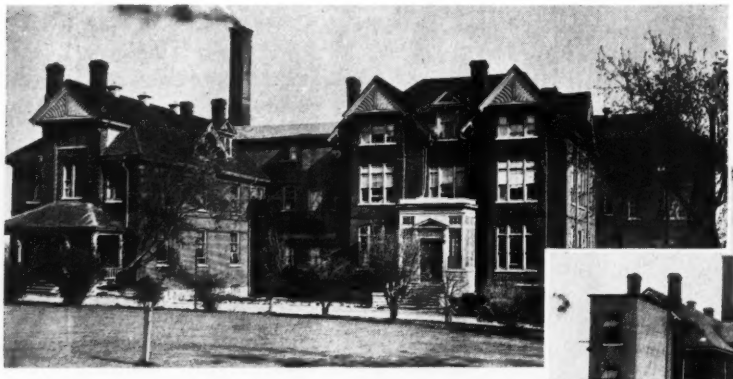


Fig. 1. The hospital before the 1938 studies of the new development were made.

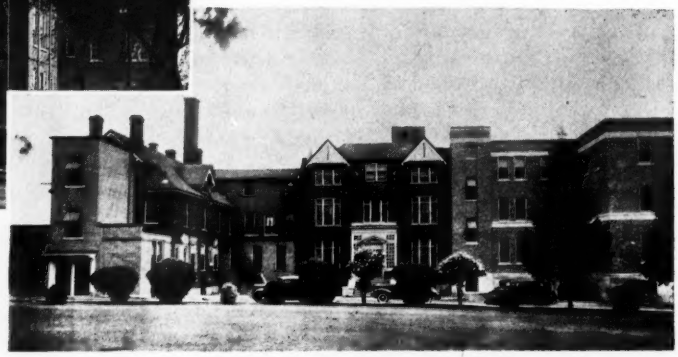


Fig. 2. The hospital of 1940 with new west wing shown at right and new entrance to isolation department and chest clinic at left.

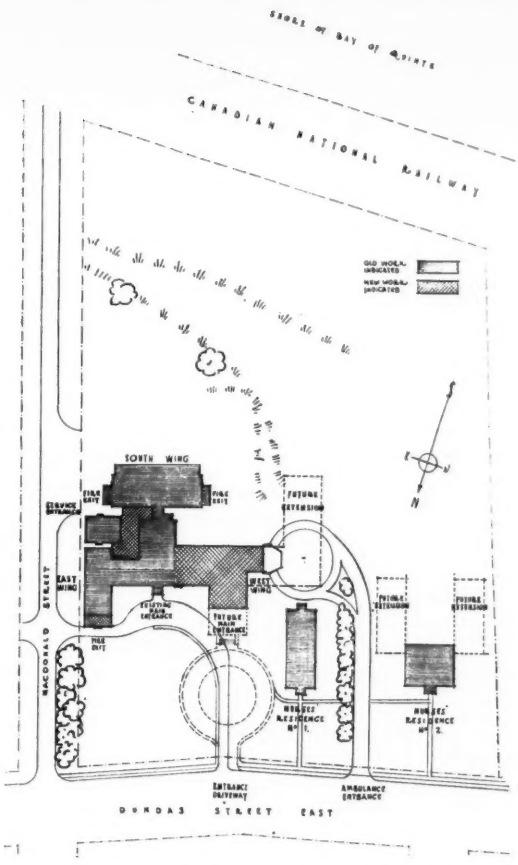


Fig. 3 shows development of hospital now completed.

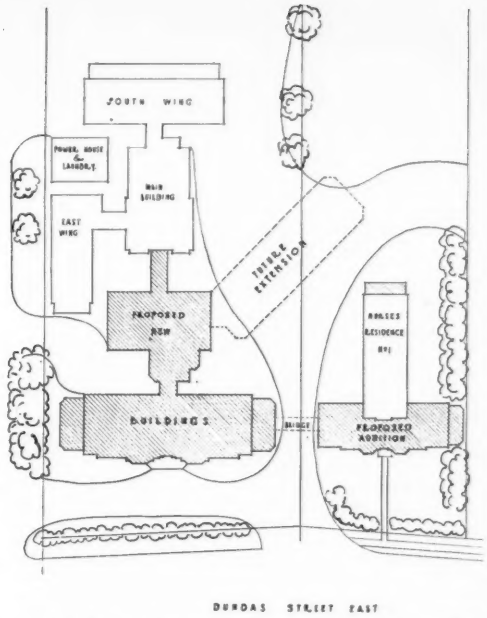


Fig. 4. Scheme discussed by Board prior to 1938. *Difficulties inherent in such a development are:*

(1) *New buildings too close to main Toronto to Montreal highway.*

(2) *Blocking of southern sunlight all winter from new buildings.*

(3) *Objectionable court areas.*

(4) *Excessive outside perimeter of new building.*

(5) *Future extension difficult.*

The Plan

Figure 3 shows that the new west wing forms the nucleus of a group of buildings, of which the old parts of the hospital form the eastern side or wings, the recently built portion —the centre, and a future development westwards and southwards will provide a wing which will balance the east blocks. This arrangement ensures that most of the patients' rooms in the hospital will always command the fine view of the bay to the south.

As time goes on the older parts of the hospital on the east side may have to be replaced with more fire-resisting structures, but in the meantime, as part of the alterations now under way, these eastern buildings have been made much safer for patients and staff by the removal of three interior open-shaft type wooden staircases, and the provision of three new masonry-enclosed and fireproof stairs which, together with the two other similar fireproof-enclosed stairs in the wing just built, make a total of five completely enclosed stairs of ample width.

These, with a new elevator and with the former elevator renovated and improved, provide adequate means of transport for all the work of the hospital and the movement and safety of patients, staff and public.

Further extension will be obtained by extending the north projection of the portion just built, as indicated by dotted lines on Fig. 3, thus ensuring that the corridors to these three departments will always be free of through public traffic between the sections of the hospital allotted to patients' care in the east, west and centre blocks.

As it is equally important that the administration department be out of the line of nursing services to patients, it is proposed that when this extension northwards of the wing accommodating the X-Ray, surgical and obstetrical departments takes place, the administration will be moved into the first floor of this wing and the patients from there will be transferred either to the west or east blocks.

Thus, ultimately, this north projection of the wing just finished will become the main entrance to the hospital and will lie on the main north-and-south centre axis, which coincides with the existing driveway into the hospital from Dundas Street.

Added Storey in Future

As developments in hospitalization may create demands for centralized departments that should not be in either the eastern or western wings, the new wing has been designed and constructed to take a future additional storey, and so keep ultimate growth more compact in form and take better advantage of the site conditions than would be the case with further lateral expansion.

Vehicular Traffic

The new ambulance entrance is located at the west end of the new construction and is reached by a new driveway; this will do away with

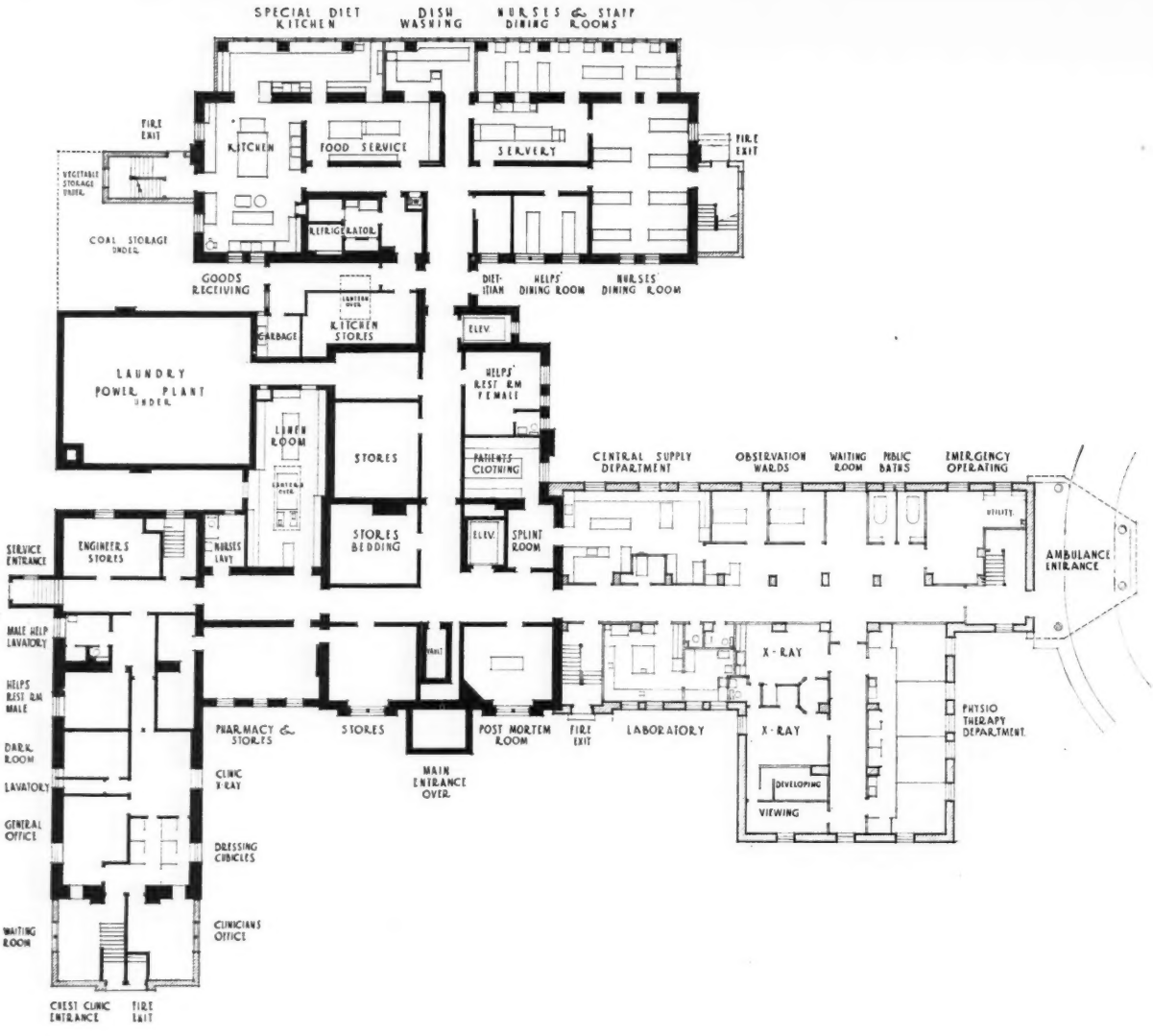


Fig. 5. Ground Floor Plan (above) The new entrances to Chest Clinic on ground floor and isolation department on first floor are shown at bottom left. New ambulance entrance to hospital and new wing on right. Remodelled kitchen, food services and nurses' and staff dining rooms are at top left.

The linen, sewing room, kitchen food stores and goods entrance were obtained at extremely low cost by roofing over former open courtyards and fitting up these spaces lit by lantern-type roof lights.

Fig. 6. (below) Third floor of new wing showing obstetrical department with nursery department in part of old building remodelled.

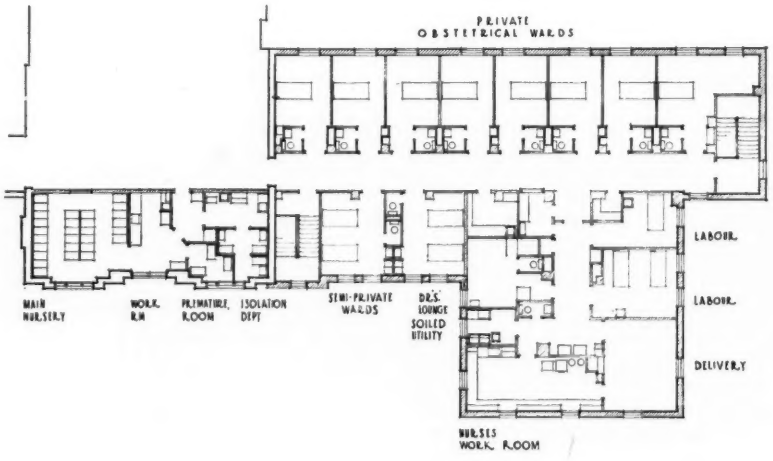


Fig. 7. shows how a new and adequate administrative department was obtained by remodelling the central portion of the 1st floor of the old main building. The new lay-out is on the right.

Fig. 8. The Record Room was formerly the X-Ray department. The removal of an old wood sheeted closet and the refinishing of the room have provided ample space for record files and, as the picture shows, the proper equipment to facilitate the preparation of patients' records. This room is located on the same floor as, and convenient to, the doctors' lounge room and business administration.

vehicular traffic round the south front of the hospital, a former defect.

For the same reason, the space between the power house and the south wing, which was formerly an open court, is now being converted into a very convenient and inexpensive one storey goods entrance and storeroom by roofing it over with a well insulated and top-lit roof. (See Figs. 3 and 5). This goods entrance is approached from the street to the east and thus all goods traffic is kept out of the hospital grounds.

The New Wing

This wing accommodates, on three floors, a total of 43 patients in twenty-five private and nine semi-private rooms; 27 of which have private toilets and 2 have private bathrooms. This brings the total accommodation to 160, not including the nursery.

On the ground floor are located the admitting, emergency, X-Ray, laboratory, central supply, psychopathic and rest rooms, and space for the development of physio-therapy services and the further extension of the X-Ray department.

Surgical Suite

The fully equipped surgical department is on the second floor of

Fig. 9. The new central supply department, located on the ground floor near the emergency and admitting departments, which permits having all work done in these departments under the direction of one supervisor.

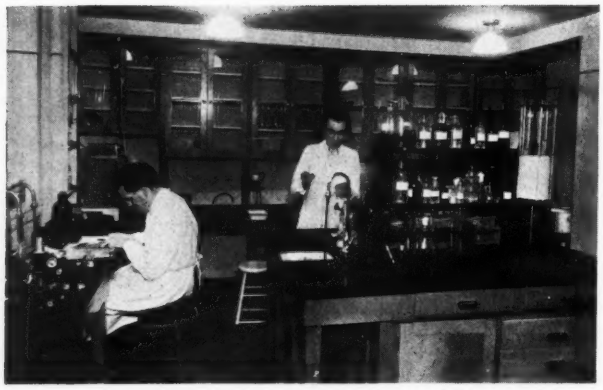


Fig. 10. *The main workroom of the laboratory department in which complete pathological services are provided.*

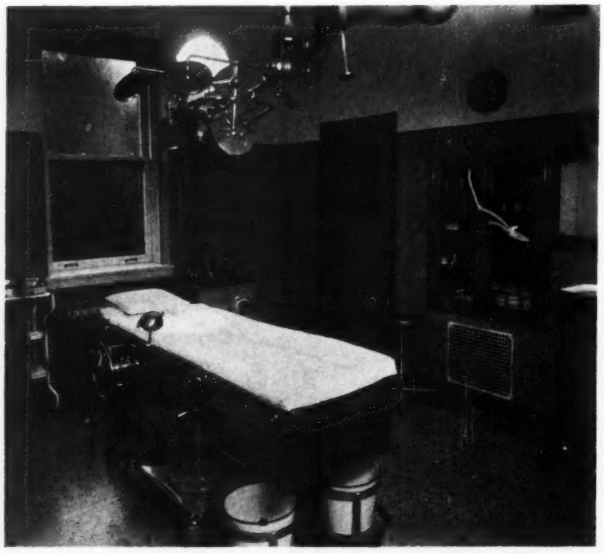


Fig. 11. *One of the operating rooms.*

Fig. 12. *Typical private room in the new wing. (Each private room has its washroom with toilet and basin.) The charge for this type of room, including telephone and radio service, is* $4.50 *per day.*

Fig. 13. *Part of main nursery looking towards nurses' workroom, premature and isolation nurseries and soiled utility. By utilizing floor area to utmost advantage, a complete set-up was possible in a compact area of an old attic. All walls and roof have been heavily treated for sound and heat absorption and transmission.*

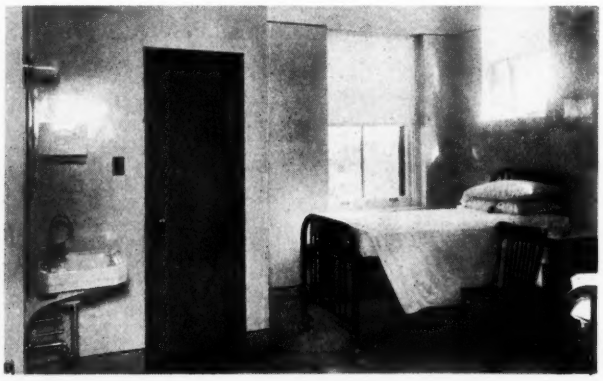


Fig. 14. *Typical room in isolation department showing doorway to toilet.*

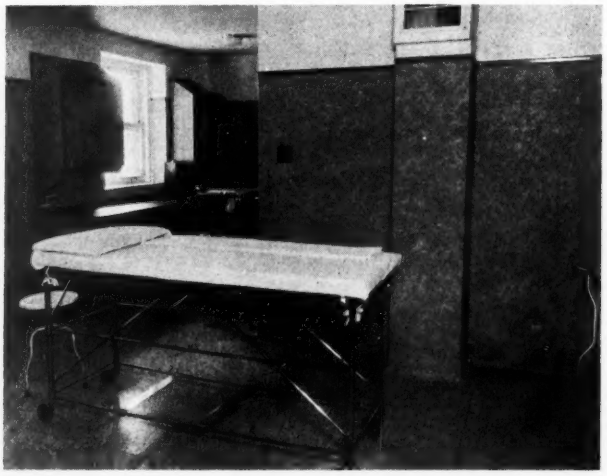


Fig. 15. *Emergency operating room on ground floor adjacent to ambulance entrance and X-Ray and laboratory departments.* *(Continued on page* 78)

The Need For a Co-operative System of Health Care

REVEREND SISTER MARIE MICHAEL,
Extension Department, St. Francis Xavier University, Antigonish, N. S.

IN a pamphlet recently published by the Public Affairs Committee, New York, the writer came across such a graphic example of the need for adequate medical care that it seems desirable to present it to you in its entirety:

When Robert Foster, Clarkville's leading lawyer woke one morning in his white colonial house on North First with a fever, headache, a sore throat, and a cough, the family physician was called at once. The doctor immediately installed a trained nurse, Mr. Foster was isolated from the rest of the family, and a strict sickroom routine was organized. Mr. Foster's temperature was normal in a few days, but he was kept in bed 48 hours longer, and then spent a week in a comfortably lazy process of "getting around again." The lawyer was back at his desk in two weeks, none the worse for his "bad throat" and "touch of bronchitis". Nor was the Foster family budget disturbed by the check for $48.00 to the nurse, the doctor's bill, the amount spent at the drugstore for medicines and sickroom supplies.

Down on South First Street, John Larson also woke up that February morning with a heavy head, a sore throat, and a cough. The floor seemed to sway beneath his feet when he walked. He did not want any breakfast—just a painful swallow or two of coffee. Then he wrapped a woolen scarf around his throat, pulled on his mackinaw and cap, and tramped off to the packing plant where he worked, trying to believe that he "felt better in the fresh air," that he "just had a bit of a cold." But the next day it was even more of an effort to get up and go to work, and the day following John Larson could not get up at all. He lay in his bed in the draughty room behind the kitchen, his face flushed with fever, muttering between dry lips, or sunk in a heavy druglike sleep. Mrs. Larson used simple home remedies and tried to keep the children away, though Jackie and Peggy kept following her into the sickroom, and more than once the baby toddled after them.

The next day, Mrs. Larson, thoroughly frightened, called the doctor—It was five weeks from the morning when John was unable to drag himself out of bed until the day he feebly made his way back to the plant. Five weeks without wages; but with doctor's bill, medicines, the store bill for groceries and milk, the rent due, and now John had a queer, terrifying flutter in his chest when he exerted himself. Round and round in John's mind went a procession of anxieties—the few dollars in the savings accounts were gone. Doc Martin wasn't too well off—he had to collect his bills. How long would the grocer wait? Peggy and Jack would have to do without milk for a while. Mustn't burn much coal ... Lord, how tired John was! ... Got to keep moving somehow.

Under the present system of medical service in this country, John Larson was not able to pay for the care which might have saved him a serious illness, shortened the length and severity of his sickness, and safeguarded him against some of the dangerous after-effects.

Economically speaking, there are three classes of people—the well-to-do, the small wage-earners, and the indigent. We are not particularly concerned with the first class who are well able to provide themselves with medical services. For the time being we are passing over the indigent class, for the discussion this morning is in the interests of the John Larsons of this country—that large group of wage earners who are able to bring up their families on a reasonable standard of living, but whose modest budget can make no adequate provision for anything so unpredictable as family illness.

A Scientific Heritage

God has endowed this creature of His—man—with a tremendous intellectual capacity and to some he has given in a much greater measure than to others the ability to ferret out the secrets of the scientific world in order that their fellowmen, less highly gifted, might profit by their discoveries. It must surely have been a part of the Divine Plan that the people of each succeeding age should become the heirs of an increasingly rich heritage. How is it, then, that we find ourselves in the middle of the twentieth century with a rich heritage, certainly, but with the masses of our people apparently farther and farther away from the enjoyment of it? This seems to be particularly true of the heritage created by the science of medicine; the stage we have now reached has been characterized by someone as "poverty of health in the midst of scientific knowledge of disease." There must be a reason.

Let us suppose that I go to a doctor and tell him that for several years I have been afflicted with severe headaches. I have been accustomed to relieve the pain through the use of aspirin tablets, but lately they have become ineffectual and now I am seeking a more potent drug. The doctor will tell me, of course, that I shall never cure my headache in that way; I must first find out what is causing the headache and then remove that. In the same way, our purpose here to-day is to try to discover the reason for this economic headache that has for years been bothering the medical world, and to decide on a suitable remedy. It refers, of course, to the problem created by the wealth of medical knowledge and skill on the one hand, and on the

Address, Convention Hospital Association of N. S. and P. E. I., Bridgewater, June, 1940.

other the inability of the people as a whole to avail themselves of it.

The Economic Background

It must be remembered that any enquiry into this phase of medicine necessarily involves, an examination of the social and economic structure in which it is embedded. The basis of any social system is to a large extent economic, and before we attempt any examination of the superstructure we must look to the foundation upon which it rests. We shall soon discover its chief ingredient to be individualism. Our whole system is built up on what might be called the "economics of scarcity." Things have to be kept scarce in the competitive system that prevails to-day in order that, by creating a demand, business may succeed. How has this system worked out? It is resulting, according to Harvey Overstreet, in economic suicide, and vested interests have killed the goose with the golden eggs by taking away more and more of the purchasing power of the masses. Thus we have the strange spectacle of a country in which there is an abundance of goods while millions of people are unable, or barely able, to provide themselves with the necessities of life.

A similar situation exists in the medical world,—an abundance of scientific knowledge, and the inability on the part of the masses to provide themselves with even the minimum of medical care.

According to a report submitted by the Committe on the Cost of Medical Care in the United States, only 55 per cent of as many cases are being hospitalized as an adequate standard would prescribe, and only 54% of as many days are being spent in hospitals as are desirable. The Committee's report also showed that 46.6% of people, whose income is less than $1,200 a year, receive no medical, dental, or eye care whatsoever in a year. If we consider Canada, the figures would not show much variation.* In fact, the study conducted by the Committe for Mental Hygiene in Canada concludes that "health conditions in Canada must be viewed with grave concern." ... Too many Canadian mothers die in childbirth because adequate medical care is not readily available to all ... The securing of medical care on a fee basis is naturally related to the capacity of the individual or family to pay fees. The Study finds that 25 per cent of Canadians live in families where the family income is less than $950 a year. With such a family income, it is evident that the family, in general, is unable to pay medical fees without depriving the members of other necessities of life. Sixty-five per cent of the population live in families with an income of between $950 and $2,950 per annum."

The Doctors

So much for the public; how is it with the doctors? In a paper entitled "Voluntary Health Insurance" delivered at the last Rural and Industrial Conference at Antigonish, Reverend J. R. MacDonald of Antigonish stated that "in the United States 20% of doctors' bills are not paid. For every doctor with an income of over $10,000, two doctors receive less than $2,500. Fifty per cent of the doctors in the United States are in the $2,500 class or under." It is safe to say that doctors, as a whole, are as much the victims of our individualistic set-up as are the masses of the people. The young doctor beginning his professional career to-day after a long period of intensive and expensive preparation is forced to become the tool of the system in a way that must be very distasteful to him. Some doctor recently said that medicine as it is practised is a luxury trade and that, as a result, the people lack health protection and the doctors lack economic security.

The Role of the State

In many countries to-day a remedy for this state of affairs is being sought in *state control*. We have seen enough of state control in other countries to recognize that *it merely substitutes state monopoly for private monopoly* and that it tends to build up a bureaucracy that will in time become just as intolerable as anything we now experience, so that "the last state becomes worse than the first." Of course, the state has undoubtedly a role to play in the maintenance of health—such as the providing of public health facilities, or the care of prolonged illnesses, such as tuberculosis, etc. But most people will agree that it must be kept subservient to the people. Just now the world is passing through a most painful crisis, and we can see more clearly than ever before the evils of "stateism" carried to its logical conclusion.

Co-operative Action

On the other hand, it would seem that only group action can effectively combat the selfishness and the individualism of our present system—and there still remains a way, namely, *the voluntary action of a free people through co-operative associations.* This method reduces the cost of medical care, takes medical people out of competitive business and places them more definitely in the field of science and service.

Let us examine some of these co-operative health organizations and see how they work out.

Most people are familiar with the story of the group hospitalization scheme at St. Andrews. ...

Perhaps not so many are acquainted with the Johnstown plan which was described in the February, 1940, issue of "The Canadian Doctor." I quote from it:

> "Three hundred subscribers have to date been secured in the area covered by the scheme.
>
> "Subscribers who pay the full fee of five dollars per year enjoy the privileges of the Association, whereas non-subscribers in the area are expected to pay the usual medical fees. Subscribers paying the five dollars a year may expect one free call a year from the doctor to their home, whereas for the second and subsequent calls they will be expected to pay two dollars a call plus ten cents a mile. Any calls made at the doctor's office by subscribers for consultation will be free, and they may expect substantial reductions in the purchase of drugs, and in the cost of surgical operations. A flat rate of ten dollars plus mileage at the standard rates will be charged for maternity cases while the medical board has undertaken to endeavour to secure a substantial reduction in hospitalization charges.
>
> "The aim of this movement is not only to give service, medical, surgical, and obstetrical, to the community, but to teach the peo-

* It is doubtful if these figures are factually accurate. Certainly they have been challenged by many competent authorities whose observations would lead them to doubt that the situation is quite that bad. The vast majority of people in both the United States and Canada are sufficiently close to competent medical and hospital facilities that they can receive a reasonable degree of care. The number of isolated or pioneer districts in which medical, hospital and dental care is not available is being steadily reduced, particularly since modern transportation and the telephone have minimized the distance factor. The diametrically opposed conclusions drawn by various groups in the recent study of health needs in the United States indicate the ease with which exaggeration creeps into statistical studies by groups approaching a subject from different angles.—Ed.

ple the great purpose of preventive medicine, hygiene and up-to-the-minute modern sanitation. The medical officer in charge holds weekly public health meetings where subjects relative to the health of the people are discussed. Later on pre- and post-natal care will be taken up with the young mothers of the community. Each unit of the area will have its own special organization and twice a year will meet in the central hall to compare and report on undertakings during the previous months."

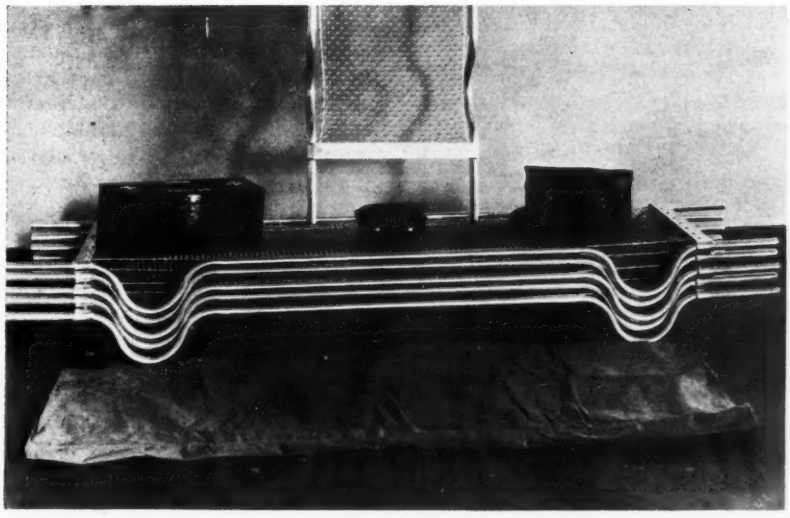
Venturing farther afield, we come to Elk City, Oklahoma, famous for its co-operative hospital. The members of the Co-operative Hospital Association of Elk City are largely the cotton farmers in the Farmers' Union. They built a hospital of their own in 1930 and doubled its size in 1935. $24.00 a year—$2.00 a day for hospitalization—6 doctors, and between 30 and 100 office calls a day—1,000 operations a year.

The consumers' co-operative at The Hague, Holland, had a department of insurance against sickness with 118,000 members. Each member pays $5.20 a year. It employs 22 visiting physicians, 9 specialists, 12 dentists, 6 nurses, 14 assistant nurses, and has a hospital, a dental clinic and two drugstores ... The salaries of the doctors vary from $2,400 to $5,000 a year.... (pre-conquest data)

In conclusion, one would like to quote from a passage read in an issue of "The Canadian Doctor":

"The contest in the world to-day is between two kinds of men; those who believe in the old jungle individualism, and those who believe in co-operative efforts for the securing of a better life for all. Let us abandon our isolation and grasp the realities of the present economic crisis. The world is changing beneath our very eyes and already the bark of Aesculapius is beginning to feel beneath its keel the great surge and movement of the rising world tide which is sweeping on, obliterating old landscapes and old scenes. We must go with the tide or be wrecked."

New Type Emergency Stretcher Simplifies Storage Problem



A new type of emergency stretcher has been developed for the Department of Pensions and National Health. This is an ideal stretcher to have available at hospitals or in industrial plants for emergency services, as the individual stretcher takes up very little space and, if several are to be kept on hand, they can be nested as shown in the illustration in a most compact fashion.

The frame of the stretcher is made of 1 and 1/16 inch tubular metal, with the cross bars welded to the sides. A ¾ inch wire mesh of 16 gauge tinned wire is used to support patients, this mesh being rivetted to the cross sections and restrained by metal hooks on the sides to give desired rigidity. The ends of the frame serve as handles and are plugged with a metal insert. The whole structure is sprayed with aluminum paint. All metal used in the construction of the stretchers is fabricated in Canadian mills and the stretchers are entirely of Canadian material. The stretchers, which weigh but 25¼ pounds, are lighter and cost less than the ordinary wooden and canvas stretcher.

The additional equipment shown in the illustration is khaki duck pouches and a medical kit box, containing necessary medical supplies, and a tarpaulin to cover the patient. These stretchers with accessory equipment have been and will be distributed in areas designated by the Department of National Defense.

D.P.N.H. Issues Free Pamphlet On Benzol Poisoning

The Division of Industrial Hygiene of the Department of Pensions and Nationl Health has recently issued a pamphlet on benzol (benzene) poisoning, which is at the present time one of the most important types of occupational poisoning met with in industry. The booklet is the first of a series on occupational hazards written for the benefit of employers and employees, which, it is hoped, will bring industrial disease to the lowest level, at a time when every attempt must be made toward increased efficiency and best use of available manpower.

The pamphlet lists the types of workers who are most likely to be exposed to the dangers of benzol poisoning and gives the symptoms and treatment of both acute and chronic poisoning. A section on the prevention of benzol poisoning is of great practical value to both the employer and employee. The pamphlet is available free of charge on application to any provincial department of health or to the Department of Pensions and National Health, Daly Building, Ottawa.

Blood Transfusions and the Use of Stored Blood

A Practical Review of Present Day Practice

GEO. SHANKS, M.D., L. T. BARCLAY, M.D., and GRACE M. ARNOLD, Toronto Western Hospital

THE transfusion of blood has become a common therapeutic measure during the last twenty years. In 1900 Landsteiner[1] first recorded observations on the differences between the bloods of normal human beings. Before this time blood from sheep, and from some other domestic animals, had been transfused into men with, in some cases, fatal reactions. As a result of the work of Landsteiner similar incompatibility between the bloods of human beings was established. He found that there were three main groups in man which he called A, B, and C. A fourth group was discovered in 1902 by Von Decastello and Sturli[2]. Jansky[3], in 1907, corroborated this work and suggested a classification in which the four groups were given numbers. In 1910 Moss[4] of Johns Hopkins Hospital, unaware of Jansky's paper, which had appeared in an obscure Czech journal, also confirmed the existence of four main groups and gave them numbers. The Commission for Standardization of Sera from the Public Health Committee of the League of Nations suggested that the four blood groups should be renamed by lettering in such a way as to give some scientific information about the type to which each was appended. Letters were selected to indicate the agglutinogen content of the cells of each group. This is now called the *International Nomenclature*. The accompanying table gives the relationships of the three systems.

Compatability of Donor

Determination of compatibility of a donor is made by four procedures. In the *first*, the group of the patient or recipient is established. For this purpose two known sera, A and B, are kept in stock. It is necessary that these be in good condition, and capable of acting in a final dilution of 1 in 60. With these sera the following conclusions may be reached concerning the blood of an individual:—

1. When his red cells are agglutinated by the A serum and not by B serum he belongs to group B.
2. When his red cells are agglutinated by the B serum and not by A serum, he belongs to group A.
3. When his red cells are agglutinated by both sera he belongs to group AB.
4. When his red cells are not agglutinated by either serum he belongs to group O.

The *second* step consists in securing, by the same methods, a donor of the same group as the recipient.

The *third* is called *matching*. In it the serum of the recipient is set up against the red cells of the prospective donor. With a suitable donor no agglutination should occur.

The *fourth*, which is not necessary in routine cases, is the setting up of the serum of the donor against the red cells of the recipient.

In many cases a donor of group O, sometimes called an *universal donor*, may be used for recipients belonging to any group. Here, however, it is well to match carefully in case there be minor incompatibility.

Carefulness and accuracy are essential in the performing of these examinations. The technologists should realize that they are paving the way for a major operation. All apparatus and material used must be kept in good condition. In addition observations and results should be checked.

Reactions

All procedures concerned in blood transfusion are designed to eliminate the possibility of any untoward reaction occurring in the patient.

Reactions may be classified as immediate or delayed[6] according to the time of their appearance. Immediate reactions are the most severe and occasionally may be fatal. These are usually due to gross incompatibility as a result of faulty grouping and matching. As symptoms may manifest themselves after as little as 10 c.c. of blood have been given, transfusions should start slowly. Early signs are flushing of the face, abdominal and lumbar pain, pallor, and shock. This is fortunately a rare event. One should, however, note any restlessness or complaint of discomfort, and, if there be any uncertainty, the transfusion should be stopped until the cause of the difficulty has been determined. Delayed reactions usually manifest themselves within twelve hours after completion of the transfusion. These are varied. There may be chills, fever, haemoglobinuria, anuria, jaundice, and anaphylactic or allergic reactions.

Comparison of Blood Grouping Systems

Jansky	Moss	International
I	4	O
II	2	A
III	3	B
IV	1	AB

Other untoward results are the transfer of disease, especially of syphilis. In connection with the last it may be remarked that serological reactions may not suffice to exclude lues in a donor. He may be infective in the early stages. A donor should be made to declare his belief that he is free from any communicable disease. He should also be obviously free from any minor infections such as colds

It is to be hoped that the Jansky and Moss notations will soon disappear from use and be replaced everywhere by the International nomenclature, for the following reasons given by Riddell[5]:

1. From a scientific point of view it is more rational.
2. From a clinical point of view it is safer.
3. From a terminological point of view it is simpler.

The Jansky notation has always been used at Toronto Western Hospital, but with the above in mind, reports on grouping give the corresponding International letter.

and furunculosis. Finally, food or alcohol should not have been taken within two hours prior to the donation.

The following is a concise summary of facts with regard to blood transfusion reactions recently circulated by a company (Baxter) which manufactures apparatus and materials for intravenous therapy.

"1. *INCOMPATIBLE REACTIONS*

– Due to errors in typing, cross-matching or undetermined factors.

A. Deteriorated or weak typing sera.
B. Failure to cross-match.
C. Disarranging tubes of donor's and recipient's cells and sera so that the wrong cells and sera are cross-matched.
D. Use of the wrong donor.
E. Use of the same donor for second or third transfusion without cross-matching.
F. Sub-groups?
G. Undetermined factors? Errors in typing and cross-matching.

"2 *CHILL AND FEVER REACTIONS* – Reactions occurring about 30 minutes after completion of the transfusion, starting with a chill followed by a rise in temperature of from 2 to 4 degrees and subsiding in about 4 hours.

A. *Pyrogens* – Pyrogens are universally present in surface waters which are the source of most water supplies. Pyrogens are endogenous by-products of bacteria – principally pseudomonas scissa and pseudomonas ureae. These pyrogenic substances are not destroyed by sterilization and are not readily entrained and carry over in the distillate. Pyrogens have been shown to be the most frequent cause of transfusion reactions. They may cause reaction when present.
   a. in citrate solution,
   b. in accessory glucose or saline solution,
   c. in donor's set,
   d. in recipient's set.
B. *Contaminated Blood* – Contamination may be very slight and the organism so avirulent that infection will not occur when the contaminated blood is transfused, but the products of the growth of the bacteria may cause chill and fever reactions.

"3. *ALLERGIC REACTIONS*–Due to passive transfer of allergy from donor to recipient or to substances to which the recipient is sensitive being transfused in the donor's blood. The reaction is easily controlled by adrenalin and is seldom important. They can be avoided by
   a. not using known allergics as donors,
   b. the use of fasting donors.

"4. *JAUNDICE REACTIONS* – With or without chill and fever and not due to the transfusion of incompatible blood.

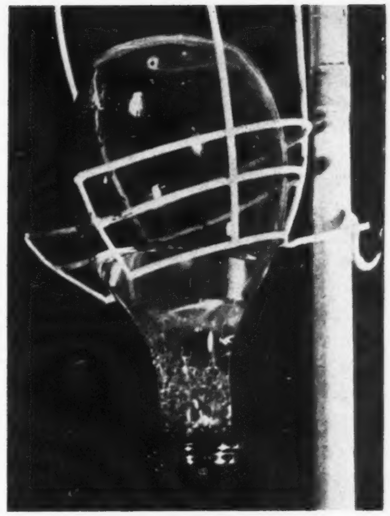
A. Blood stored beyond its safe storage period; increased fragility of stored red cells resulting in their being destroyed in the blood stroma of the recipient.
B. Contaminated stored blood; increasing fragility of red cells so that sufficient haemoglobin is released to cause jaundice."

Stored Blood

The securing of donors in emergencies may not always be easy. Either friends of the patient or professional donors may be available. In the case of the former, several may have to be examined before one who is compatible is found. Some serological test for the exclusion of syphilis should be carried out in addition to grouping and matching. A few questions have to be asked and possibly a partial physical examination made. Since nearly 50 per cent of the emergencies calling for transfusion occur at night, after the regular working hours of the laboratory staff, the necessary grouping and matching have been a problem in most institutions.

A development of recent years solving this problem has been the use of stored blood in what are commonly called "blood banks". Following the description of a "blood bank" in the Cook County Hospital, of Chicago[7], similar departments were established in many institutions in the United States of America.

During the past two years stored blood has been in use at the Toronto Western Hospital. At first it was used on a small scale, but, since March of 1940, it has been employed for transfusion in practically all cases. As a result of our experiences we have concluded that the blood bank is of great advantage to all concerned in transfusion therapy.



Flask showing beads for filtration of blood.

Receipt and Issue Record

RECEIPT NO.	RECEIPT DATE	NAME	AGE	WARD	PHYSICIAN	AMOUNT	GROUP (JANSKY)	GROUPED BY	CHECKED BY	WASS.
203A	12/1/40	Mr T. Howe (Mr L. Bell)		F	Harris	600 cc	II	M.D.	L.C.	L – neg K – neg
	DISPOSAL DATE	NAME	AGE	WARD	PHYSICIAN	AMOUNT	GROUP (JANSKY)	MATCHED BY	CHECKED BY	REMARKS
only	20/2/40	Mrs Edna Conley	69	B	Detweiler	600 cc	II	Hall	Hankes	Hall: No reaction. Over the damage.
RECEIPT NO.	RECEIPT DATE	NAME	AGE	WARD	PHYSICIAN	AMOUNT	GROUP (JANSKY)	GROUPED BY	CHECKED BY	WASS.
204A	23/3/40	Mr Sloan		J	Locke	600 cc	II	L.C.	M.D.	L-Neg K-Neg
	DISPOSAL DATE	NAME	AGE	WARD	PHYSICIAN	AMOUNT	GROUP (JANSKY)	MATCHED BY	CHECKED BY	REMARKS
only	1/4/40	Mr Wacey	46	J	Willinsky	600 cc	II	M.D.	L.C.	Sinclair: No reaction. [illegible]

Upper name is donor. *Lower name is recipient.*

Advantages of Blood Banks

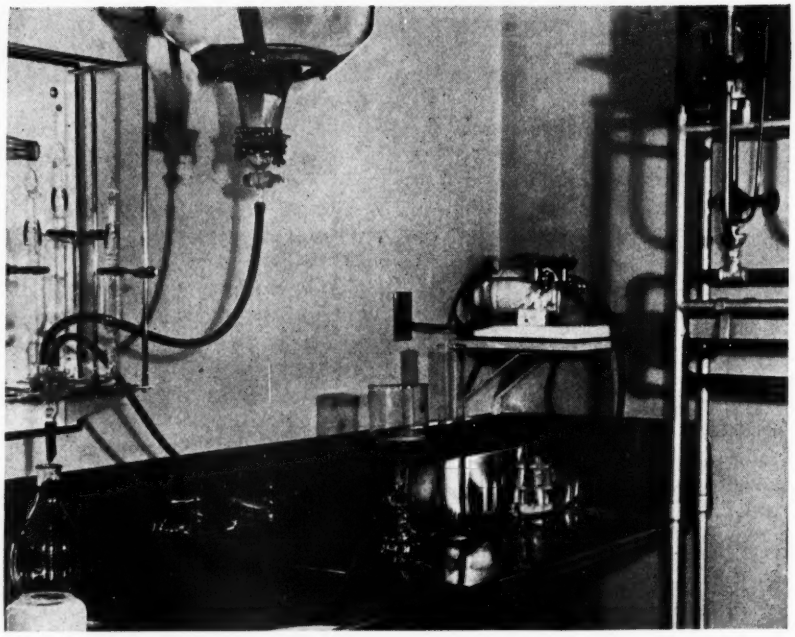
The attending staff know that blood is always available when required, and that they may use this valuable therapeutic measure freely whenever indicated.

The intern staff is spared the labour and confusion incidental to interviewing and grouping a large number of prospective donors before each transfusion. Much of this must necessarily be done at night, since it is usually impossible to get the friends of the patient to the hospital during the day, within working hours. Except for night emergencies, the work of grouping is done by the laboratory staff, whose members are able to systematize their work, even though it may be somewhat increased by caring for the stored blood.

Similarly, the operating room is not asked to provide for individual collections of blood at irregular times, but for only three blood "collection clinics" each week. These are arranged at regular times convenient for all concerned. Collections may be made from several donors then with little more trouble than each isolated collection entails.

The patient benefits by receiving blood of known sterility, non-luetic, without delay, and with less inconvenience to his friends.

The blood, as it comes from the refrigerator, is known to be sterile and non-luetic, and, except for an occasional night emergency, carefully matched by expert technologists with the benefit of the advice of the pathologist. Absolute matching is made possible by the variety of specimens available. While it is possible and permissible to use blood for transfusion after as long as one month of storage, and while comparatively minor chemical and cytological changes occur during two weeks of refrigeration, in practice it will likely be unnecessary to keep the blood longer than five days. Up to this time it is practically unchanged.



Equipment for making any intravenous solution (including anti-coagulant for stored blood) automatically.

Blood Refrigerator. Left—Stored blood ready for use. Right Top—stored plasma. Middle—stored blood awaiting results of tests. Bottom—flasks ready for collection clinic.

Replacement

Donors are required for replacement of blood issued for transfusion. Their donations should be arranged for by the physician with the patient who has been given a transfusion of the stored blood. Donors should be sturdy, healthy, and free from even minor affections such as "colds" and "boils". No food or alcoholic stimulant should have been taken for two hours before the removal of blood. They should sign a form declaring themselves free from communicable disease, and also a consent for the withdrawal of blood. Donors should be given an appointment for the "collection clinic", if possible, *in advance* of anticipated transfusion. Otherwise the physician (staff or resident) in charge of the case must arrange for a friend of the patient to appear at the next "collection clinic" following the administration of stored blood. In the case of a private patient who does not wish to arrange for collection from a friend, he may pay for replacement by a professional donor.

Collection and Storage

The donor is placed on the operating table, and a sphygmomanometer cuff is put as high as possible on his arm to act as a tourniquet. His arm is extended at right angles to his body on a suitable rest. All aseptic precautions in the technique of blood

(*Continued on page* 82)

Thanksgiving 1940

Thanksgiving, festival of autumn, "season of mists and mellow fruitfulness"! It is a season marked by the people of many lands. To us it means harvest home — the heavy gold of wheat, the blaze of maples, the haunting beauty of Indian summer. It is a festival which is peculiarly dear to the Canadian family, a time which links us with the life of our fathers.

With the black shadow of war over our country we are reminded vividly of what this season meant to "the pioneers." It was to them a time of sincere thanksgiving—thanks for the rich harvest of the earth, the sweet fruit of their labour, a pause before the long winter which they must pass through, which they must survive, before the earth would blossom again. Their thanks were no less joyous because of an uncertain future. The way of life which they had chosen was one which must be lived with courage—a courage which knew and accepted realities, a courage which must sometimes be labelled grim as well as gallant. They proved themselves men worthy of their breeding and to their sons and daughters they passed on a proud tradition.

To-day we observe thanksgiving in a rich land glowing with beauty, a haven toward which the eyes of men in war-torn Europe turn with longing. But once again we face a long and bitter struggle. Grant that we may face it with courage which will be worthy of our heritage. For the winter precedes the spring!

Institute on Hospital Administration Toronto, October 28th--November 9th.

The course in hospital administration to be given by the School of Nursing at the University of Toronto will provide a well rounded and valuable course of instruction in a wide range of topics of broad interest to the hospital administrator and to those desiring to obtain training in administration. Starting on Monday, October the 28th, and running through to Saturday, November the 9th, the committee in charge has arranged a series of helpful lectures, demonstrations, round tables and hospital visits.

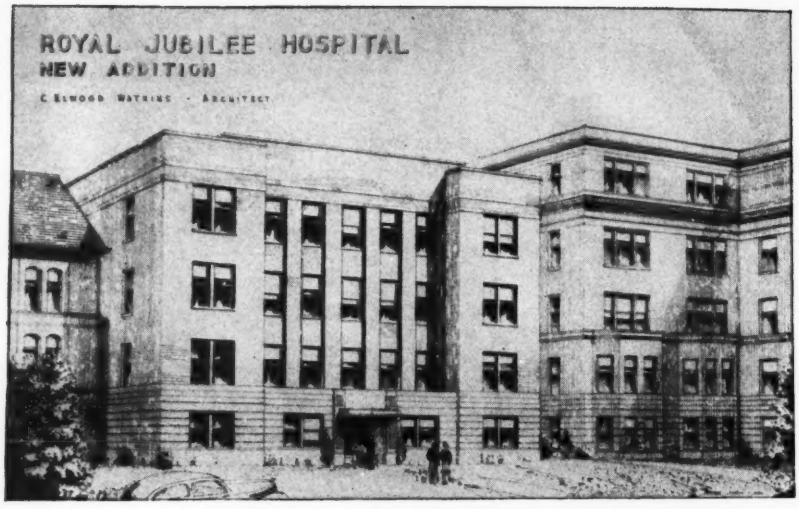
Among the topics which will be studied are the following:

Fundamentals of hospital organization
Management of the small hospital
Health Insurance
Legal problems in administration
Purchasing and stores
Central supply room
Accounting
Hospital personnel
Prevention and control of infection
Laundry
Hospital construction
Plant maintenance
Nursing service
The school of nursing
Food costs
Hospital housekeeping
The business office
Medical records
Public relations and public education
Hospital ethics
Qualifications of an administrator.

Visits to selected departments have been arranged at St. Michael's Hospital, Toronto General Hospital, Toronto Western Hospital, Hospital for Sick Children and the Women's College Hospital.

Among those giving instruction will be Dr. M. T. MacEachern of Chicago; Dr. Harvey Agnew, Toronto; Clayton Smith, Eastern High School of Commerce, Toronto; Arthur J. Swanson, Toronto Western Hospital; R. Fraser Armstrong, Kingston; Professor W. A. Scott, University of Toronto; Gordon Friesen, Belleville; Miss Harriett Meiklejohn, Women's College Hospital, Toronto; Leo. E. Edmonds, K. C., Toronto; John Hornal, Purchasing Agent, Toronto Western Hospital; Dr. F. A. Logan, R. W. Longmore and Miss Winnifred Moyle of the Toronto General Hospital; B. Evan Parry and James Govan, architects, Toronto.

The fee for the course is $25.00. Remittances, which are to be made payable to the University of Toronto, are to be attached to the application and forwarded to the Secretary, School of Nursing, University of Toronto. Refunds of money can be arranged up to the first day of the course in case of inability to attend.



This addition will connect the present East Wing with the building ultimately to be replaced by an Administration Building.

Royal Jubilee Hospital Adds Vital Addition

Construction Conforms to Long Range Plans for a Composite Whole

HAVING successfully weathered the first two stages of its development, the Royal Jubilee Hospital, of Victoria, B.C. is now well embarked on its third stage, the construction of a second east wing, thus bringing the institution into an enviable position among the outstanding hospitals of Canada and the Pacific Coast States.

To know the history of the Royal Jubilee Hospital is to know the history of Victoria, for the institution was started in 1858, exactly fifteen years after the first stockade was built on the shores of the Strait of Juan de Fuca, and which marked the establishment of Fort Victoria by Sir James Douglas, its founder.

The new wing that will be officially opened late this Fall is the result of a well thought out plan of hospital development. It is not a hurried project to meet the increasing needs of Victoria and surrounding districts, but another unit in a composite whole that, when ultimately completed, will form a block of buildings comprising two east wings and two west wings, each forming an "L", and an administrative block between the two, thus forming a giant U. The first east wing was erected in 1925, and the second one is now in the course of construction.

This latest addition, apart from taking care of many hospital requirements, will service particularly maternity cases and women's public ward, thus giving Victoria the latest equipment and accommodation for the treatment of obstetrical cases.

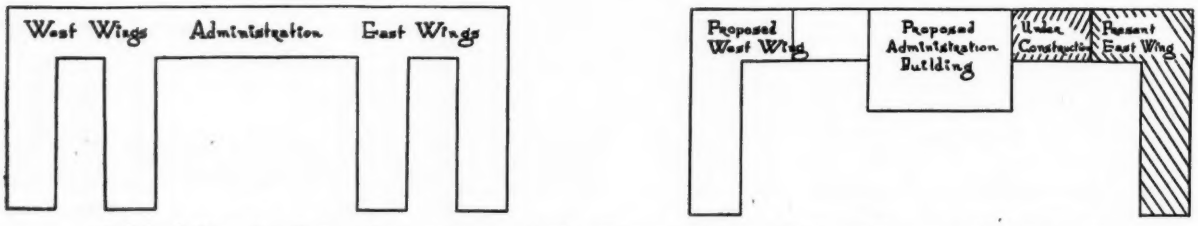
The Early Days

Perhaps the best medium by which to give a picture of the hospital's development would be to quickly cover its history and thus illustrate how carefully this institution has been planned and how cautious the directors of the hospital have been in preparing a scheme of future development that will permit the institution to take advantage of constantly changing conditions, and keep abreast of the latest scientific developments.

The Royal Jubilee Hospital had its beginning in a somewhat inspiring manner. A sick Indian was carried to the home of Bishop Cridge who had charge of the spiritual life of the community in those early days, and was there left on a mattress beneath a tree in the Bishop's garden.

When the Indian was discovered, Bishop Cridge hardly knew just where to place him in order that he might have proper medical care, so for the time being the Bishop's home became a hospital.

While the Indian was receiving



Original Plan for Future Expansion on Left.—Present Plan on Right—The two wings at each end are planned to form an "L" rather than to be parallel as originally planned.

proper attention, the Bishop quickly organized a committee of citizens, who in turn took up the question of providing hospital accommodation for the fort and its surrounding settlement.

A small whitewashed cottage, that answered the purpose was found, and there in that little cottage the Royal Jubilee Hospital, which now has accommodation for approximately 450 patients, had its beginning.

The first stage of the hospital's development was largely one of constantly finding larger homes that might be converted into hospitals. So for some years the institution moved from one home to another, occupying a larger house on each occasion until, in 1887, a definite policy was established so that the institution might be developed on a permanent site.

Thus in the Jubilee year of Queen Victoria's reign, and in commemoration of that event, the Royal Jubilee Hospital established its first permanent building in 1887.

The hospital constructed at that time was of the old Franch pavilion type and, during the next twenty-five years, the hospital was developed in this institution, until the directors devised a new plan of advancement and in 1925 erected the first east wing, which formed the first unit of a new hospital block that is now acquiring its second wing.

As the new accommodation is being provided, more space is being released in the old pavilion-type hospital for other purposes. In this respect it is interesting to note that, under the supervision of Dr. T. W. Walker, superintendent of the Royal Jubilee Hospital, a new isolation unit has been established in the old block of buildings on a basis whereby the accommodation can be used for general purposes when not in use for isolation cases.

This new unit is a tribute to the far-sightedness of the superintendent, and is a direct result of his studies of similar developments elsewhere, and or research work carried on during the course of administration.

The new unit differs from the old one in the fact that it will always be available for general purposes. It will not lie idle for ten months of the year as the old one did.

Present East Wing of the Royal Jubilee Hospital. The wing under construction is connected at the extreme left.

It has accommodation for twenty patients in private cubicles, which are arranged in such a way and ventilated in such a manner that there can be no spreading of an isolated disease. Hot and cold water is provided in each room, with modern controls, of course. Special high pressure sterilization equipment has been installed and a special operating room provided for these patients.

A separate kitchen and laundry have been provided for this unit; all eating and cooking utensils will be sterilized after using. In the laundry a graduate nurse, specially trained in the treatment of communicable diseases, has been placed in charge.

The New Wing

When the new east wing is officially opened it will be one of the most modern hospital units in Canada. It will provide sixty more beds to increase the present accommodation by twelve per cent, thus placing the institution in a position to meet not only the increased needs of Victoria, but also the growing needs of the navy, army and air force services, in addition to preparing the hospital against the time when war casualties will be repatriated from stricken zones for hospitalization.

The *first floor* of the building has a general office, admitting office, social service room, small waiting room and a nurses' room. There also is a large waiting room, two examination rooms, room for special nurses, treatment room, rest room and a secretary's office.

On the *second floor* are six wards, including an isolation ward, two semi-private rooms, and a utility room in addition to the usual bath room and lavatory facilities.

The *third floor* comprises a utility room, nursery, kitchen, treatment room, medical ward, surgical ward, tonsil ward, admitting ward, two private rooms and a semi-private room.

On the *fourth floor* are located a utility room, kitchen, supplementary utility room, linen room, and ten semi-private rooms.

Radiological Department

Another department of the hospital's service that has benefitted from the well defined plan of development and the greater accommodation provided by extension of the institution, is the Louisa Todd Memorial Department of Radiology. Much new equipment has been installed in this department, which is under the capable supervision of Dr. H. H. Murphy. The extent to which this department has been developed can perhaps best be understood by the record for the last twelve months. This shows the following number of treatments and examinations in the radiological section: radium 91, deep therapy 4,299, superficial therapy 178, radiographic and fluoroscopic examinations 6,139.

Examinations and treatments in the physiotherapeutic section are as

(*Continued on page* 82)

Obiter Dicta

The Boston Convention

IT is difficult to know who gained the more by attending the Boston convention of the American Hospital Association—the handful of Canadians who laboriously collected a bagful of permits, passports, visas, photographs, exchange control board papers and a painfully streamlined roll of pocket money, or those Americans who were so eager to obtain first hand information about war conditions in Canada.

Certainly it is always a privilege to attend this great gathering. No matter what one's special field, there is abundance and to spare of stimulating ideas in the many and varied papers, in the fruitful discussions and in the round tables. The exhibits, commercial and educational, are alone worth the trip. Elsewhere in this issue there is a fuller though still all too brief reference to the highlights of this meeting.

At the same time, apart from several well received contributions to the programme, perhaps the greatest service of the delegates from the north was the calm assurance which they were able to give on many occasions that the British Empire is going stronger than ever. Our American cousins are deeply concerned over the welfare of Great Britain—far more than would be gleaned by reading the vapourings of an isolationist section of their press. Actual war sentiment itself would seem to be gaining definite headway. But for months the American people have been depressed by their pessimistic radio commentators and by a section of the press which has selected its headlines from German rather than British communiques. With their naturally vivid imaginations and warm hearted impulses, they have envisaged a crushed Britain going the sad way of the other hamstrung European nations. Unnumbered delegates from all parts of the United States expressed privately their deep relief and comfort and, in some instance, actual amazement at the confident assurance by the Canadians present that thumbs and chins were never higher, that the old empire, though battered and bruised was as seaworthy as ever and that the countless heroes in the tight little isle would like nothing better than to have this screaming psychotic and his pouter pigeon accomplice come out and fight like men. That is why the Americans like Churchill; in fact one gains the impression that Churchill now holds a place in their national esteem not far removed from that with which they regard Washington and Lincoln. As antidote to this pessimism which is entirely without foundation, we can all, in our own limited way, echo these sentiments of confidence in the ultimate outcome of the struggle.

Military Training of Hospital Employees

ELSEWHERE in this issue reference is made to the desirability of maintaining our hospital services to the civilian population during the periods when hospital employees may be called up for their period of military training under the National Resources Mobilization Act. While no specific pronouncement has been received by the Canadian Hospital Council from Ottawa dealing directly with the Council request that the necessity of maintaining hospital services be considered in the calling up of these young men for this training, assurance has been given that the representations of hospitals relating to the choice of time for the training of certain individuals would be given sympathetic consideration by the Board under Section 15 of the Regulations which deal with just this contingency arising in industry at large.

The suggestion has been made by one or two hospitals that the Canadian Hospital Council might request exemption from this training on the part of certain individuals holding important or key positions in civilian hospitals. The Executive Committee has given this subject some thought and is of the opinion that it would not be in the best interests of the country to seek such exemption. After all, these individuals are not being recruited for the C.A.S.F., but are simply taking a thirty-day period of training to better fit them to defend their country, should such be necessary in the early future. Every man of military age should know the rudiments of handling a rifle and no individual is so indispensable to an institution that he could not be spared for this period of thirty days of service for his country. We do get along without key employees during holiday periods and in case of illness. If it can be arranged with the Divisional Boards that individuals holding vitally important positions in hospitals be given their training at a period which would not cripple the work of the hospital, there would seem to be no reason for seeking exemption.

Canadian Intern Board Continues

THE Canadian Intern Board is again preparing to assist hospitals and students in the selection of interns for next year. The C.I.B. is operated by the Canadian Association of Medical Students and Interns (CAMSI), in co-operation with the Canadian Hospital Council and the Department of Hospital Service of the Canadian Medical Association. The chairman is Dr. R. A. Seymour of the Vancouver General Hospital, the treasur-

er is Dr. F. A. Logan of the Toronto General Hospital and the secretary is Mr. C. J. Healy of St. Michael's Hospital, Toronto. The honourary chairman is Sir Frederick Banting.

Letters are now being sent to the deans of the medical faculties, to the student societies and to the superintendents and the chairmen of the intern committees of the hospitals approved or commended for internship. The routine which proved so successful last year will be repeated again. Senior students will make application to hospitals before November 1st and will then send to the C.I.B., at Room 107, Anatomy Building, University of Toronto, the list of the hospitals to which they have made application, placing the hospitals in the order of choice. This list must be returned to the C.I.B. by November 1st.

The hospitals are requested to send to the Board by December the 1st the list of the students who have made application for internship, dividing the list into (a) first choice, (b) alternate choice, (c) those not acceptable. The Canadian Intern Board will then dovetail these lists, approximating first choices wherever possible. If two students apply for the same position, the one selected will be the student placed higher on the hospital's list. If two hospitals accept the one student, he will be assigned to the hospital higher on his list. In no case will a hospital be assigned an intern not on its first or alternate list, nor will a student be assigned to a hospital to which he has not made application. Students not placed and vacancies not filled will be listed and circulated, so that the interested parties can get together.

Facing Facts

A Critical survey, in retrospect, of the trend of events in this country over the past twenty years, in the light of our present precarious position, is not particularly comforting. We note the development of materialism and of a selfish individualism which did not make for a "rugged" nation or Empire. We note the development of a feeling of smug complacency. We appeared to accept the liberties, privileges and carefree manner of life as something sent down with the rain and the sunshine, and to feel that no conscious effort on our part was necessary to safeguard and preserve them. We appeared to forget that the democratic principles which we were, to some extend, abusing, the liberties, and the British way of life, had been bought for us with the blood of generations of British and latterly of Canadian soldiers, and that, if 7,000 years of the world's history be any guide, it would still be necessary to make further payments on account to insure their continuance. We gradually gave over any concrete or concerted attempt to instil ideas of citizenship into our youth and our naturalized citizens. We banished cadet training from our schools. We starved our Department of National Defence, and gave almost no opportunity to citizens to undertake even voluntary military training. We spent a ridiculously low per capita amount on this fundamental national responsibility. We spoke glibly of nationhood and refused to assume even the most elementary responsibilities of national status. We behaved as though we, by some divine intervention, were to enjoy eternal peace . . . .

Our public men talked much of national unity but scarcely at all of national vision, forgetting the scriptural injunction, "where there is no vision, the people perish." We, like our good neighbours to the south, had our isolationists. If we fail to win this war and if Britain falls, North American isolationists will see, unfolded before their eyes, the type of isolation which in degree and character, will astound and dismay them. . . .

To-morrow's Canada will have a unity based on a clear cut vision of her future as a nation, and as a unit of Empire. She will cast aside all bickerings. The lesson taught by the fate of smaller nations over the past five years will be remembered. She will enter whole-heartedly into a much closer knit British Empire, and will enjoy the security provided by its united strength. Imperial trade agreements will assure all but self-sufficiency in times of Empire strain. The burden of Imperial Defence will be fairly distributed. The Dominions will be anxious to assume their appropriate part of the load, and never again shall we have the inclination to load the greater part of the expense on the Mother Country, taxing ourselves one dollar per head for this purpose, while she pays one hundred . . . Empire citizenship will be the proud boast of every Canadian, and will command respect the world over.

Canada has had a glorious yesterday. She is having the most trying, difficult and dangerous to-day of her whole life history. She will not fail, but will emerge purified by the fire and united as never before. She will enter into a still more glorious to-morrow, with a clear national vision and with a high sense of her Imperial destiny.

From an address by Wm. J. Deadman, M.D., to the Hamilton Rotary Club.

The Advertiser Wants to Know

IT would be quite impossible to prepare and publish this journal without the aid of our good friends the advertisers. They provide an essential portion of the wherewithal which permits us to send to you between these covers valuable information about hospitals, legislation and other matters of vital concern to you. We know you read the advertisements and send for the articles, because you have told us so. Yet few people think of mentioning THE CANADIAN HOSPITAL when they are sending in these orders. It seems like a trivial point, but the hardheaded advertising manager, who places his money where it brings the greatest returns, wants some proof that his advertisements in these pages are read. If you value your journal – and you tell us that you do – please tell our advertisers when you are ordering their products that you saw them advertised in these pages. Your action will confirm our contention that we have a most unusual reading public – one that spends over fifty million dollars a year on hospital maintenance alone.

Golden Jubilee at Public General Hospital Chatham, Ont.

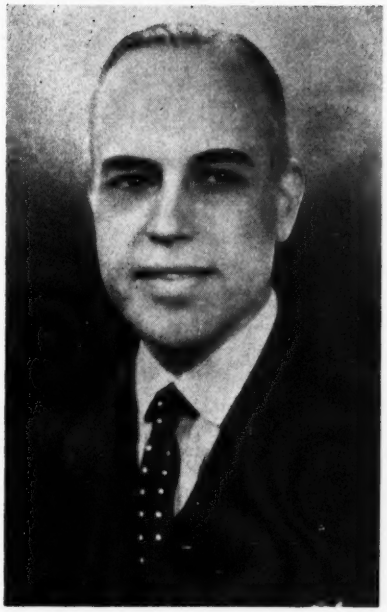
THE Public General Hospital at Chatham, Ontario, established in 1890, celebrated its Golden Jubilee this year. Many historical incidents in the history of the hospital have been recorded in a historical sketch of the hospital which has been incorporated in a special memorial volume issued to mark the occasion. It is of interest to note that the corner stone was "well and truly laid" by the well known Goldwyn Smith. The first patient was one suffering from malaria, then common in Chatham. For the first five years, 25% of the patients were treated for typhoid and 3% for malaria. Only 4% of the patients were surgical cases. The hospital averaged 36 surgical operations per year!

It is of interest to note that the first obstetrical patient spent a week in the hospital before delivery and sixteen days afterward, yet her total account was only $10.50. Private rooms then cost $3 to $8 a week. Ward beds were $2.50 per week.

The original staff for the 25 beds consisted of the superintendent, Miss Isobel Johnston, 3 probationers, a cook and a janitor. For the first few months the superintendent received no pay; thereafter she was paid $10 a month. Apparently, this small salary was comparable with that of some of the other help, for it is noted that in 1898, the laundry workers were receiving $10 a month with a bonus for blanket washing. However, by 1898, Miss Johnston had been stepped up to the princely salary of $25 per month. Her loyalty to the institution, despite offers of higher salaries elsewhere, was shown by the fact that after her resignation in December of 1902, she handed back $260 of this hard earned money towards the cost of an elevator. "The simple records speak eloquently of a woman to whom nursing was not a profession but a crusade."

Kitchen help got $6 a month. Of course, at that time chickens cost twenty-five cents each and apples were $1 a barrel. In the first year of operation, groceries, provisions, drugs and fuel altogether cost

Above.—The Hospital in 1890.
Below.—As it appears in 1940.



Mr. William M. Gray

$740.13; in 1939 the operating costs totalled $81,826.31.

An odd item is noted in the accounts for 1898. This shows that a Thomas Williams spent eighteen weeks in a public ward at $2.50 per week. The account includes $9 for whiskey. As there was an unpaid balance of $11.50, he apparently got his whiskey and a week's care for nothing.

The hospital which started as an institution of 25 beds is now a fine, exceedingly well equipped and modern hospital of 130 beds. At the present time the chairman of the board is William M. Gray, the superintendent is Miss Priscilla Campbell, the assistant superintendent is Miss Lila M. Baird, the chairman of the Golden Jubilee Committee is H. G. Grosch and the chairman, medical staff, is Dr. G. H. R. Hamilton.

Miss Priscilla Campbell, R.N.

Hospital Employees Come Under Regulations For Military Training

HOSPITAL administrators and staffs have been concerned over a possible depletion of staff, particularly among the technicians and skilled workers, which may result from the compulsory training period for all unmarried males or childless widowers between the ages of 21 and 45. The government is making every effort, however, to co-operate with employers, and an opportuntity is being given to make arrangements to have such training taken at a time when it will least affect the operating efficiency of the business or institution.

The Regulations recently issued by the Department of National War Services state, under Section 15, dealing with Employees of Manufacturers and Others, that any manufacturer, financial institution, public service corporation or other employer, will be furnished, upon request, with an estimate of the number of men in the age classes likely to be called out for military training during the twelve months period. Not later than two weeks after the receipt of such estimate, the employer may formulate and forward to the Divisional Registrar a plan to enable employees liable to military training to be called out during the said twelve months period in a manner which will least inconvenience the carrying on of the business or undertaking of the employer. The employer is then notified by the Divisional Registrar of a hearing before the Board of the Administrative Division in which the men affected are employed. Hearing shall be in camera and it will then be determined whether such a plan is desirable in the public interest. If the plan as submitted, or in modified or altered form, be approved by the Board, postponement or advancement of the military training of the employees of such employer may be arranged. Postponement or advancement of training is granted, however, only on condition that every employee of such employer liable for training shall be required to report for training during some one of the training periods to be held during the said twelve months period.

While the Section which has been condensed above relates in the main to employees of industrial plants, we are given to understand that this same principle will apply to hospital personnel. The Canadian Hospital Council has made representations to Ottawa as to the embarrassment to essential work which might result in some larger hospitals if too many technicians, for instance, were called up for training at the same time, or, in the case of smaller hospitals, if the sole technician might be called up at an inopportune time. It would appear that the Department of National War Services is quite sympathetic to the position of the hospitals under such circumstances. Should hospitals anticipate any difficulty in this matter, or desire to make representation with respect to any employees, it is recommended that they get in touch with the Registrar of the Administrative Board which has been set up in each of the 13 districts into which Canada has been divided.

Hospital Employees to Go to Camp

Member hospitals of the Toronto Hospital Council will hold positions open for all employees who are called up to take thirty days' military training. The army pay will be the sole allowance while at the camp if not on vacation and drawing pay for the vacation period.

Toronto Hospital Council to Establish Credit Bureau

ARTHUR W. SMITH
Secretary-Treasurer, Toronto Hospital Council

DURING the month of January of this year the Toronto Hospital Council decided that some system of checking the "dead beats" who go into hospitals should be set up. A committee was appointed to study credit bureaus that were in operation in other cities, such as Cleveland and Chicago, and report their findings. After the committee had gathered together all available information two alternative plans of operation were outlined:

Plan 1: to be operated by the Toronto Hospital Council.

Plan 2: to turn over all collections and credit work to an outside agency.

In August of this year it was unanimously agreed that the Toronto Hospital Council should establish a Credit Bureau, controlled by a board of three representatives of the Toronto Hospital Council, but with the business done by an outside agency.

The next step was for the hospital representatives to discuss with their boards the question of turning over their collection and credit work to the proposed Bureau. As this article is being written practically all members of the Council have signified their intention to turn over all collections and credit work immediately without waiting for the next meeting of the Council. This can only mean one thing: these hospitals realize the soundness of the plan and the benefits that they will receive from the Bureau.

The Plan

The proposed plan of operation as submitted by the study committee and approved by the Toronto Hospital Council is as follows:

The Committee proposes to organize, for the benefit of the hospitals, a central collection and credit bureau, to be known as the Toronto Hospital Council Credit Bureau, working in conjunction with the firm of Ogilvie & Parker Limited. (This firm is reported upon in detail by the Committe.)

The hospitals will forward to this Bureau at the discretion of the hospital superintendent *all accounts not paid in full within* 60 *days following dismissal from the hospital.* (All accounts except: Workmen's Compensation, City orders, Township, Associated Medical Service, Benefit Societies, Accident Insurance Accounts and Estate cases.)

Collection of these accounts will be undertaken by the Bureau, either under the name of each hospital, or under the name of the Bureau, as decided by the Council.

All moneys collected will be held in a trust account, and remittances will be made to the hospital monthly. Each hospital will be billed separately each month (commissions, legal fees, etc.).

The Bureau will supply the Council with a fidelity bond in whatever amount is considered necessary to protect all moneys entrusted to the Bureau. In arranging the bond Ogilvie & Parker Limited would have to give 40% cash security.

Ogilvie & Parker Limited will have a separate accounting system for the Bureau.

The Bureau will supply the hospital with individual reports advising as to progress on every account given for collection.

Where the Bureau considers legal action necessary to enforce collection, it must first obtain permission from the interested hospital and will then institute action through its own legal department. (Court costs and legal fees, additional to rates quoted).

The Bureau will maintain a complete record of all delinquent patients, and this record will be made available to the hospitals.

A Good Feature

The hospitals will forward daily to the Bureau, the names of their doubtful daily admittances, and the Bureau will check these names against the existing records. Where a duplication is found, the Bureau will immediately report to the hospital so that appropriate steps may be taken at once. (In this connection they point out that all of the records at present in their offices would also be made available to the Bureau.)

Note: Ogilvie & Parker have a "black list" of 35,000 names.

Where the hospitals feel that credit check-ups are necessary, these will be made by telephone at a charge of twenty-five cents each. Complete written credit reports will be furnished by the Bureau, at a charge of one dollar each.

The Council will appoint some of its members to serve as a committee, who could inspect the progress, and the books of the Bureau at monthly to yearly intervals, as decided by the Council.

The Bureau's rate for collection services will be 15% of all moneys recovered. This rate is given with the understanding that the accounts will not be more than sixty days past due. In the event that the claims were placed with the Bureau more than sixty days past due the collection rate would be twenty-five per cent.

This 25% rate will cover all collections at present on the hospital's books, more than sixty days past due.

In view of the capital outlay to be made by the Bureau, the Council will be required to guarantee to the Bureau at least one year's continuity, following which a three month's cancellation clause, executable by either party, would suffice.

What Will the Hospitals Gain by such a Credit Bureau?

The hospitals will send daily to the Bureau a list of all their doubtful pay admissions; these will be checked by the Bureau who will advise the hospital within twenty-four hours whether this patient is "blacklisted." If the hospital be notified that the paying habits of their patients are not satisfactory, it will be up to the hospital to take necessary steps to assure payment, if possible, or else move the patient to a cheaper accommodation;

(*Continued on page* 88)

Expansion of
BAUER & BLACK EXECUTIVE PERSONNEL

H. R. HALL
President

C. R. MURPHY
General Manager

G. C. STINEBACK
Gen. Sales Mgr.

C. E. JAEGER
Field Sales Mgr.

The rapid and steadily increasing business of Bauer & Black Limited ... greatly accelerated during recent months ... has necessitated an expansion of executive personnel in the Canadian organization.

It is interesting to recollect that this firm was the first to pioneer and put on a practical basis, the supplying of ready-made hospital dressings. This has done much towards the improvement of modern hospital dressings practice. In recent years Bauer & Black has made many other important contributions to the surgical field—non-irritating Formula 87 Adhesive Tape, Curity Surgical Masks, Zytor Sutures, and Curity Diapers, to mention just a few outstanding examples. With this well established background of accomplishment, the enlarged group of Bauer & Black executives can be expected to make further important developments in the supplying of the hospital surgical dressings.

The new executive structure just announced by H. R. Hall, President of Bauer & Black Limited is as follows: C. R. Murphy, General Manager; G. C. Stineback, General Sales Manager; C. E. Jaeger, Field Sales Manager; F. B. Armstrong, Administration; L. S. Campbell, Factory Manager.

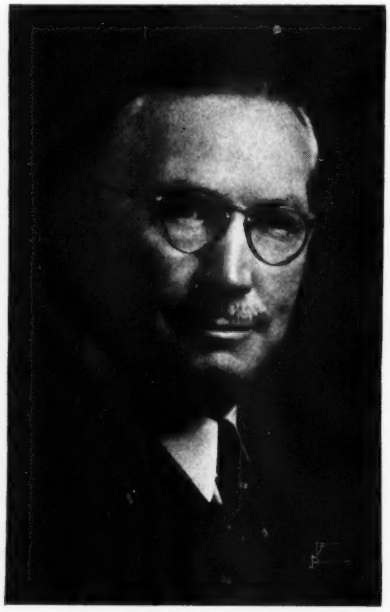
Boston Meeting an Inspiring Convention

Timely Topics Feature A.H.A. Session

BOSTON, the city of culture and the acme of hospital achievement, overflowed with hospital people from far and wide last month. The 42nd convention of the American Hospital Association and those of its several associated organizations were an unqualified success and again provided untold inspiration for the thousands of delegates for many months to come.

Boston has all that the eager delegate desires. Medically, there is everything in hospitals from the "Bullfinch" at the Massachusetts General, dating back to 1821 to the ultra modern new White Memorial Building. What with the Boston City Hospital, the Peter Bent Brigham, the Boston Dispensary and a host of other hospitals, and the three universities, there is more than can be visited even without the convention. Historically there is the famous old Boston Common, the Bunker Hill Monument, the site of the Boston Tea Party and the battlefield at Concord.

We hear a lot about the reserve of the New Englanders but none of it was evident last month. Despite the Presidential primaries, there was time and thought for the visitors and for those who came from a distance there will long be pleasant memories of the kind hospitality of our hosts. There were not as many Canadians in attendance as one would have desired – and for obvious reasons, too



Benjamin W. Black, M.D., Oakland, Cal., President, American Hospital Association.

– but it is unfortunate that more could not have been present from Toronto to hear the apparently never-ending comments of appreciation of Canadian hospitality from so many who journeyed to the Queen City convention last year.

American College of Hospital Administrators

It is not easy to pick out the high spots of a convention like this, largely because its five-ring circus nature makes it utterly impossible to attend more than a fraction of the important sessions being simultaneously presented. One does note, however, the excellent sessions of the American College of Hospital Administrators under the gavel of Mr. James Hamilton of New Haven, the singing President whose rendering of "God Save the King" established a high precedent for his successors. The Convocation for new members and fellows was dignified and impressive.

The A.C.H.A. banquet speaker, President Charles Seymour of Yale, gave a stimulating interpretation of "Privilege and Responsibility in a Democracy". Pointing out that the people of the dictator nations were willing to accept responsibilities, he seriously asked if democracy, as we know it, would go the way of Babylon, of Egypt, of Athens and of Rome. Indicating that the American people would have to pay a price for their security, he reminded his audience

(*Continued on page* 50)

Treasurer Asa S. Bacon, Mrs. Arnold Emch, the noted Psychiatrist, and Arnold Emch, Associate secretary, A.H.A.

Sam. Cohen, Administrator of the Jewish General Hospital, Montreal, is not concerned about his horoscope.

At left.—Dr. Thos. R. Ponton, Editor of "Hospital Management" and formerly of Vancouver. Centre.—Dr. Winford H. Smith, Administrator of Johns Hopkins Hospital, Baltimore, and a former A.H.A. President, discusses "Preparedness" with Dr. Wm. H. Walsh, Chicago, well known hospital consultant. Right.—C. L. Neu, head of the Physicians Record Company, publisher of many hospital works.

that over a century ago, Jefferson was willing to unite the United States with Great Britain to stem the Napoleonic threat. The general educational session had a number of outstanding addresses on the education of the administrators. Dr. Arthur C. Bachmeyer, Director of the University of Chicago Clinics, is the incoming President.

The American Hospital Association

One has a recollection of endless avenues of exhibits, of crowded sessions and of hosts of friends and acquaintances all eager to know how Canada is faring and what her people think of the situation. The programme was well above the average and drew large audiences. One of the best attended sessions was that on Preparedness where Dr. Winford Smith urged that it is no longer safe to argue that "it cannot happen here". He urged that schools for nurses be increased in size 10 per cent and that subsidiary workers be trained in larger numbers. President-elect Benjamin Black, himself the former director of the Federal Veterans' Bureau, protested the system of taking highly trained specialists out of civilian life, giving them high rank and then wasting their talents by forcing them to act as administrators for which they have no training.

One of the most dramatic demonstrations took place at the Massachusetts Institute of Technology where Professor J. W. Horton demonstrated the explosibility of anaesthetic gases and the control of static. This is described elsewhere in this issue. Another popular demonstration was a movie by Dean Francis Dawson of the College of Engineering of the University of Iowa who vividly illustrated how pollution of drinking water and of sterilizing solutions occurs in hospitals. Backflow was shown when the water supply was cut off; even without the water supply being cut off, backflow may occur if a large amount of water be used on lower floors. Taps must be at least one inch above any water surface and all traps must be adequately vented to prevent suction drawing out the water seal.

Hospital Service Plans Consider Organization

Behind the scenes committees were busy discussing the proposal to organize the various hospital care plans upon a national basis. After much discussion preliminary steps were taken to make possible a national organization closely linked with the Board of Trustees of the American Hospital Association.

A special feature was a complimentary dinner to Dr. C. Rufus Rorem, who for ten years has been the outstanding expert on the subject of group hospitalization. He was presented with a large volume of letters expressing the appreciation of outstanding hospital, industrial and social leaders throughout the continent for the leadership given to this movement.

The new House of Delegates, now in its third year, is functioning without a hitch. Only those who sit in at these sessions, as members or as onlookers, can appreciate the tremendous amount of work done by the various councils and committees under the general direction of President F. G. Carter, Secretary Bert Caldwell and Assistant Secretary Arnold Emch.

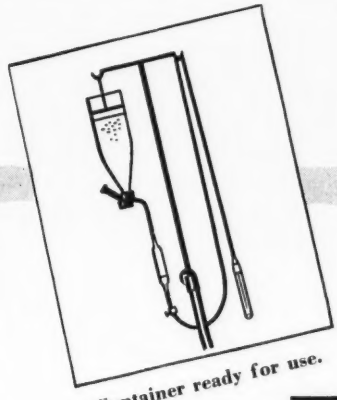
The 1941 meeting is planned for Atlantic City in September.

The Patient and the Intern

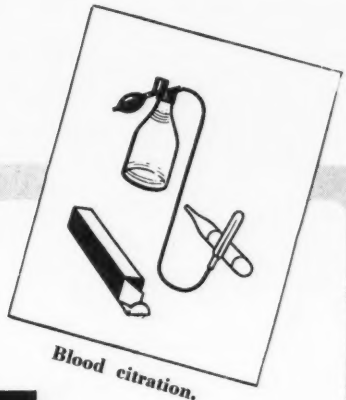
The patient is usually hospitalized for a specific condition. The intern tends to concentrate his attention on this particular condition, which frequently is in an advanced stage. Often he does not view the patient as an individual or see him when the disease is in its early stages. To overcome these potential weaknesses in his training and to give him experience that will more nearly resemble the problems he will face in practice, he should have considerable experience in a well-rounded outpatient department. During this period, stress should be laid on the early recognition of departures from normal and on methods of arresting their advance and, if possible, of eliminating their causes. Many times these departures are due to social and economic conditions or are aggravated by them. Emphasis should be laid upon follow-up work so that the intern may see the end results of treatment and the extent to which the individual is able to adapt himself to normal life.

From the Report of the Commission on Graduate Medical Education. R. C. Buerki, Director of Study.

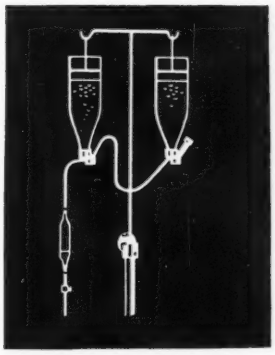
Simplicity combined with flexibility



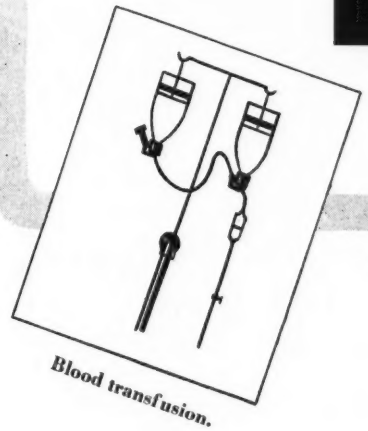
Container ready for use.



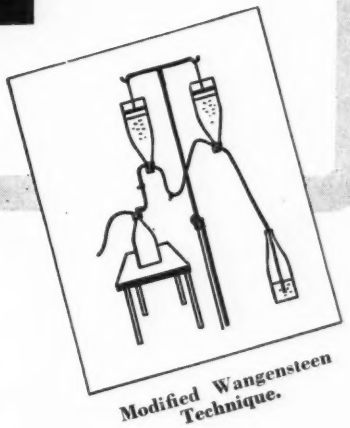
Blood citration.



Series hook-up.



Blood transfusion.



Modified Wangensteen Technique.

The new and original technique introduced by the Abbott Laboratories has been devised by our Research Staff after several years of experimentation in the largest clinics of this continent. Every detail has been studied in an endeavour to eliminate any loss of time on the part of those who use the Abbott equipment in the different set-ups illustrated above. Our representative will be very pleased to give a demonstration of the New Abbott Intravenous Solutions and Abbott Equipment.

ABBOTT INTRAVENOUS SOLUTIONS AND EQUIPMENT

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Sound Insulation Value of Various Types of Wall and Floor Construction

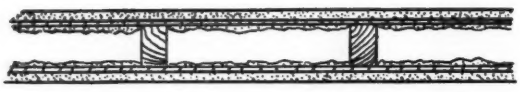
PART 5 of the completed draft of the National Building Code recently prepared by a special committee of the National Research Council embodies some valuable data with respect to the sound transmission deadening properties of various types of wall and floor construction. It is specified in this code that walls and floors separating dwelling units within any building shall be of a type of construction having a sound transmission loss, or sound reduction, of not less than 45 decibels.

It is also specified that: "No plumbing fixture, water supply pipe or mechanical equipment which produces, or is liable to produce, noise during operation shall be fastened to or supported by any wall separating dwelling units within any building, unless the fasteners or supports are all non-rigid or other construction adequate to prevent the transmission of solid-borne noises to such wall."

Transmission Loss Values for Certain Typical Wall and Floor Constructions

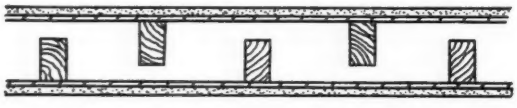
Sound Transmission Loss = T.L.
Decibel = db

WALLS



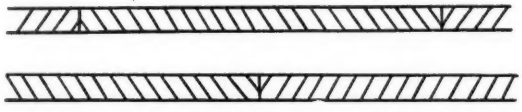
Wood studs; wood lath; scratch and brown coats of lime plaster; smooth, white finish. T.L. = 42 db.
Wood studs; wood lath; scratch and brown coats of gypsum plaster; smooth, white finish. T.L. = 36 db.
Wood studs; metal lath; scratch and brown coats of lime plaster; smooth, white finish. T.L. = 34 db.
Wood studs; metal lath; scratch and brown coats of gypsum plaster; smooth, white finish. T.L. = 39 db.

Wood studs; ½ inch fibre building board applied to both sides; joints filled. T.L. = 29 db.
Wood studs; ½ inch fibre building board applied to both sides; scratch and brown coats of gypsum plaster on both sides; smooth white finish. T.L. = 47 db.
Same as above except two layers of ½ inch fibre building board applied to each side. T.L. = 49 db.

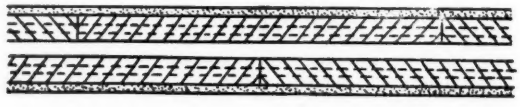


Staggered wood studs; ½ inch fibre building board applied to both sides; scratch and brown coats of gypsum plaster, smooth white finish. T.L. = 51 db.

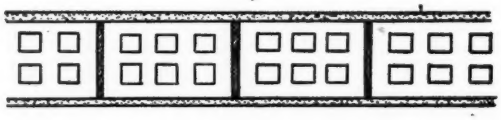
Solid gypsum tile, 3 inches thick; brown coat of gypsum plaster on both sides; smooth white finish. T.L. = 38 db.



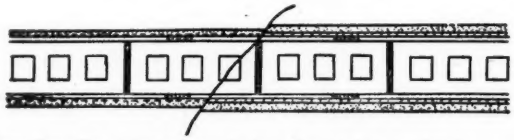
Two panels of solid gypsum tile, each 2 inches thick; 4-inch air space. T.L. = 51 db.



Two panels of hollow gypsum tile, each 3 inches thick; ½ inch air space between panels; brown coat of gypsum plaster on each panel; smooth white finish. T.L. = 49 db.



Hollow clay tile, 8 by 12 inches, six cells; brown coat of gypsum plaster on both sides; smooth white finish. T.L. = 46 db.



Hollow clay tile, 4 by 12 by 12 inches, three cells; wood furring strips; metal lath; scratch and brown coats of gypsum plaster; smooth white finish. T.L. = 54 db.
Hollow clay tile, 4 by 12 by 12 inches, three cells; wood furring strips; fibre building board, brown coat of gypsum plaster; smooth white finish. T.L. = 52 db.

Hollow cinder block, 4 by 8 by 16 inches, three cells; ¾ inch brown coat of gypsum plaster on both sides; smooth white finish. T.L. = 45 db.

(*Continued on page 54*)

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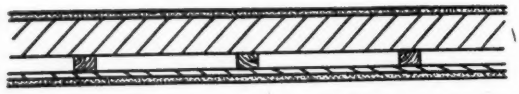
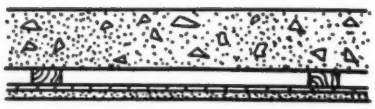
Four inch brick panel; brown coat of lime plaster on both sides; smooth white finish. T.L. = 45 db.

Four inch brick panel; brown coat of gypsum plaster on both sides; smooth white finish. T.L. = 47 db.



Four inch brick panel; brown coat of gypsum plaster and smooth white finish on one side; on the other side, 2 by 2 inch furring strips, ½ inch fibre building board, brown coat of gypsum plaster, smooth white finish. T.L. = 54 db.

FLOORING



T.L. = 53 db.

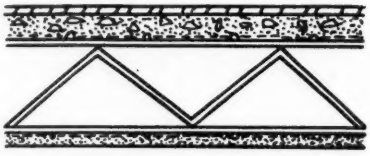
Four inch, reinforced, concrete slab; furring strips; ½ inch fibre building board; brown coat of gypsum plaster; smooth white finish.

T.L. = 58 db.

Same as above except floating floor added. This floor consists of 1 by 2 inch nailing strips, rough flooring, and ⅜ inch hardwood finished flooring.

T.L. = 42.5

⅜ inch finished flooring; rough flooring; wood joists; wood lath; plaster; smooth white finish. (Note: Insertion of ½ inch of fibre building board between rough and finished flooring gives T.L. = 43 db).



T.L. = 54 db.

Battleship linoleum; 2½ inches of concrete on high rib metal lath; open web steel joists; high rib metal lath; gypsum scratch and brown coats; smooth white finish.

T.L. = 54 db

Floating floor consisting of finished flooring, sub-flooring and nailing strips; ½ inch fibre building board; rough flooring; wood joists; wood lath; plaster; smooth white finish.

Construction

Construction of an additional floor to the nurses residence at the Ottawa Civic Hospital has been proposed. Estimated cost is $45,000.

A.C.S. Hospital Standardization Conference To Be Held in Chicago, October 21 - 24.

THE twenty-third annual Hospital Standardization Conference, sponsored by the American College of Surgeons in connection with the Clinical Congress, will be held at the Stevens Hotel, Chicago, from October 21 to 24 inclusive.

Official announcement will be made at the conference of the 1940 List of Approved Hospitals.

Among the speakers will be the Surgeon General of the United States Navy, Rear Admiral Ross T. McIntire, who will discuss "Medical Preparedness for National Emergency"; Everett W. Jones, director of the Albany Hospital at Albany, New York, will describe how a hospital can prepare for national emergency. Rev. A. M. Schwitalla, dean of St. Louis University School of Medicine and president of the Catholic Hospital Association, will speak on "The Hospital of Tomorrow" and Dr. Benjamin W. Black of Oakland, California, President of the American Hospital Association, will discuss "The Effect of the Present Trend in Specialization in Medicine on Hospital Administration and Service."

Consultation service periods have been arranged with recognized leaders in the hospital field on specific topics. Breakfast conferences will be held on Tuesday, Wednesday, and Thursday, on hospital administration, medical records, and public relations respectively. Convalescent care will take one entire session of the Conference.

Among the other subjects to be covered in the general sessions and panel discussions by outstanding authorities in each field will be: "Anaesthesia Hazards", "Nursing Service and Nursing Education," "Problems of the Small Hospital," "Hospital Administration and its Relation to Organized Medicine," "The Problem of Tuberculosis in the General Hospital", "Organized Health Service for Hospital Employees", "Medical Staff Organization", and "Hospital Rates".

The Wednesday morning session will be a joint conference of the American Association of Medical Record Librarians and the American College of Surgeons.

Twenty Chicago hospitals will be the scene of group conferences and demonstrations on Wednesday and Thursday afternoons.

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The Storage and Issuance of Hospital Supplies

A Valuable Study under the Auspices of the American College of Hospital Administrators

By NELLIE GORGAS,
Assistant to the Director, University of Chicago Clinics.

A VERY practical and helpful analysis of the many factors involved in properly controlled and organized storage and issuance of hospital supplies has been made available by the American College of Hospital Administrators at 18 East Division St., Chicago. Miss Gorgas, the author of the report, has prepared a seventy-eight page analysis which should be read by every superintendent, purchasing agent or steward and by every hospital trustee. Miss Gorgas, who is Assistant to the Dean of the Division of Biological Sciences in the University of Chicago and Assistant to the Director, University of Chicago Clinics, has based her study upon the actual set up in a number of highly organized and efficiently operated institutions and has received extensive assistance from Dr. A. C. Bachmeyer and other outstanding hospital authorities. This report can well be considered as representing the most authoritative and collective opinion available at the present time.

As any attempt to analyze a study which deals with such a large number of separate but related details would be incomplete at the best, the following excerpts have been taken from the pages of this report as representing the many sound and practical statements with which this report abounds.

Excerpts

"Storage is often the most-neglected function in the hospital as far as architects and boards are concerned. It is considered the first thing to eliminate when space becomes dear. It is forgotten that lack of storage space sometimes causes dangerous understocking in the hospital, as well as loss of quantity discounts. It was found in this study that an average of thirty square feet per bed for storage of supplies is the minimum for efficiency."

* * *

"The board is responsible for establishing the general rules they wish followed in obtaining this end. That is, the board must decide upon the type of organization to be set up—how centralized the handling of supplies shall be, what the authority relationships are to be, what shall be provided in the way of facilities and personnel, the accounting system in general, how large and diverse a stock shall be carried, and how, on the whole, it shall be controlled. The superintendent is then responsible for completing the organization along the lines determined upon and for seeing that it functions efficiently."

The best way to prevent using valuable space for slow - moving stock is never to let it be stocked.

* * *

"Since the purchasing and storeroom functions are necessarily interrelated, it is recommended that they be combined under one executive."

* * *

"Centralization of stores is advised, if at all feasible, because it has the following advantages: (1) no confusion in finding the right location for obtaining different supplies, (2) no duplication, hoarding, or unnecessary expense in equipment, (3) unitary responsibility, (4) expert supervision, (5) economy in time and labour, (6) smaller space requirement, (7) better purchasing efficiency, (8) facilitation of standardization of supplies; and (9) a lower necessary inventory investment.

"This study has shown that it is not unusual to allow the dietary department and the pharmacy to specify and even order their own supplies, but the goods should be handled by the general stores and issued to the department just as in the case of the other departments."

* * *

"Since the superintendent is always held by his board as ultimately responsible for the provision and care of supplies, all purchase orders should be signed by him or his representative, and all requests for issues should be properly authorized and be subject to alteration or rejection by him or his representative."

* * *

"An expert accountant should be employed to install the accounting system and devise the necessary forms and cards to provide an accurate record of all supplies received and issued, so that at all times the board may, if it wishes, know the amount purchased, the prices paid, and the amount used."

* * *

"The American Hospital Association has approved the advisability of keeping perpetual inventories in all storerooms. To check these, physical inventories should be taken at least once a year, preferably twice, and in between times test inventories on items should be taken frequently. The board must decide as to how its inventory records shall be kept and verified.

* * *

"The board should also indicate on what basis it wishes to have its inventory valued. In some hospitals the market cost per unit is used, and the cost of supplies used is credited if some of the stock remaining was purchased at a lower price. This gives credit where credit is due for

(*Continued on page* 58)

judicious purchasing. In others, the average cost per unit remaining is used, so as to make the valuation as near actual cost as possible. Usually, however, the last cost per unit is used, regardless of how many units are left from earlier purchases, and regardless of when the last purchase was made; this is probably the simplest way to calculate the value. During this study no indication was found that the practice generally accepted in business of pricing inventory at cost or market, whichever is lower, is followed in the hospital field."

* * *

"Since the hospital has a very definite moral obligation to the patient to make the best possible use of its money for his care, there should be little excuse for speculation in stores; that is, for the purchase of large quantities in anticipation of possible price rises. The hospital's money and the purchaser's time should be devoted only to economic purchases in which all possible risks and all speculative profits are eliminated."

* * *

"A turnover of four or five is generally considered economic by purchasing agents. That is, if $20,000 worth of supplies are consumed in a year, $4,000 or $5,000 is sufficient to have tied up in stock in the stores at any one time."

* * *

"Only consumable supplies and small equipment for which there is a recurring need should be stocked. The superintendent should limit sharply the number of items in stock and weigh carefully the advantages of any additional items, for reduction in number will reduce the investment needed for stock inventory, decrease the labour in the stores, and simplify purchases."

* * *

"The board should leave to the superintendent the details of the storeroom, but it should insist that he provide an adequate written procedure for receiving, distributing, storing, and issuing goods. This system should require that all supplies received shall be counted, weighed, and checked before acceptance. If possible, provision should be made for all goods to be received in one central location, thus preventing noise and confusion elsewhere."

Basically, the system of routine procedures for obtaining supplies should insure that all orders shall be in writing from the consumer, be subject to standards in quantity and quality as established by the board and superintendent, be approved by the superintendent or his representative, be specific and correct in terminology, and be receipted for when delivered.

"If it is made a rule that all shipments of goods for return or repair shall be centralized in the storerooms, and if the storerooms are under the direct control of the purchasing agent, loss and damage may be reduced, and claim negotiations avoided to a larger extent."

* * *

"While many institutions follow conscientiously the practice of issuing only on properly authorized requisition, the results are vitiated by the fact that the authorization has become perfunctory and the storekeeper does not have sufficient authority to alter or reject requests when they exceed reasonable limits of standards for a given percentage of occupancy. Except where the superintendent personally approves all issues, as is often the case in the small hospital, the storekeeper should be responsible for bringing to the attention of the superintendent all excessive requests, because absolute control of all issues must rest with the superintendent or his representatives."

* * *

"To waste time training poor workers is foolish, but to spend sufficient time training good ones is wise . . . The well-organized department provides for its own self-perpetuation by always having an understudy preparing himself to be promoted into each particular situation, thus keeping the organization alive and progressive and the morale good by advancements on the basis of merit."

* * *

"Much time may be saved by having space ample to eliminate necessity for rehandling material."

* * *

"A root cellar is less expensive and in some ways is a more satisfactory accommodation for fruits, vegetables, jams, jellies, marmalades, preserves, and some canned foods than is cold storage and is well worth serious consideration in hospitals not so equipped."

"Care must be taken with canned milk because it turns dark when it becomes overheated, and also, if it is left too long in one position, the cream separates. Cans of milk and also of meat should be turned over at least every sixty days. Because of the temperature factor, these should probably be kept in the root cellar, but in the driest part."

* * *

"Food refuse attacks the finish of sliver, and it should be seen that none remains on the silver long. It pays to keep silver in good repair. Camphor in bulk should be kept with the silver because it retards the tarnishing of the metal by sulphur from coal and by many other contacts. Probably the best place for silver being held in reserve is in the safe. It should at all events be under special lock and key because of its high resale value."

Normal Requirements for Storage Space in Hospitals

Bed Capacity	Square Feet of Space	Dimensions (in Feet)		
		Height	Width	Length
40 or less	1,024	14	32	32
40-75	1,600	14	40	40
75-100	2,400	14	40	60
100-150	3,000	14	50	60
150-200	3,600	14	60	60
200-300	6,400	14	80	80

"In general, it may be said that wooden shelving and equipment have a low first cost, are quickly built, and have no damaging effect on material stored on or in them, but, on the other hand, steel equipment is fireproof, has greater longevity, and is economic of space, besides having a high reuse and salvage value."

* * *

"Normally three times the daily linen order is considered the correct amount to be in circulation, one set on the bed or in use, one in the wash, and the third on the shelf, because it is better for linen to allow it time to dry thoroughly and cool after laundering before reusing it."

(*Continued on page* 60)

"Quarters used for the storing of goods should be under a special lock for which there should be only two keys, one in the hands of the superintendent, and the other held by the storekeeper. The lock should not be on the master-key system."

* * *

"In piling goods it is best to remember that linen tied in bundles of ten, twenty-five, or fifty items is easiest to count, sort, and arrange as well as to bill when issued. Paper should lie flat."

* * *

"Having received goods and having been debited with them, the storekeeper must show a voucher for all issues and should be held as accountable as is the cashier for the actual cash, since his is just as definitely a receipt and expenditure transaction." (M. T. MacEachern)

* * *

"One of the most important details in the issuing of supplies is that the storekeeper must have the prerogative of questioning requests for issues. The simplest arrangement is to allow him to take up directly with the department requesting the issue the requests which he thinks exorbitant, but this is usually resented very much by the department concerned, and often by the person who has approved the request. For this reason it is found more expedient to have the storekeeper bring such requests to the superintendent to be reviewed by him with the department head."

Supplies should really be considered in the same category as cash, and as much care should be taken in accounting for them as in the case of money.

* * *

"Floor inventories are taken in most institutions monthly or quarterly, usually by the head nurse. A clever and simple device for inventorying the nonconsumable supplies, such as basins and instruments, is to have a loose-leaf book ruled with thirteen columns, in the first of which is to be written the standard adopted for the floor; in each of the other columns is to be written the actual inventory on the last day of the respective months."

* * *

"The labour involved in the initial installation of a perpetual inventory is considerable, but its maintenance is not arduous, and the resultant control over stock fully justifies the effort because it provides the following information in readily assimilated form with little effort: (1) the firms from whom purchased with comparative prices; (2) the quantities purchased and the seasonal variations; (3) the total quantities used and the amounts used by different departments: (4) the value of supplies issued to different departments; (5) the inventory of goods on hand, which should agree with the actual quantities found and also convey a warning when stock is running low; (6) the value of goods on hand, which should agree with the balance in the stores account."

Over 30,000 "cured" cases of cancer are registered at the headquarters of the American College of Surgeons.

Annual A.H.A. Institute

The Eighth Annual Institute for Hospital Administrators, conducted by the American Hospital Association at the University of Chicago in conjunction with the American College of Hospital Administrators, the American College of Surgeons and other bodies, in September, was a most successful event. Its classes are usually limited to 100 (although this year 135 were enrolled) and are widely attended by administrators and by those in other hospital positions desiring to train for administration. The teaching staff is drawn from all over the United States and Canada, and many Canadians have taken these courses. Dr. M. T. MacEachern is the director of the institute, with Mr. Arnold F. Emch and Mr. Gerhard Hartman as associate directors.

Here and There in the Hospital Field

By THE EDITOR

The Blood Man

Behind the scenes of the modern hospital there are many individuals making their particular contribution and of whom the patient or "the man on the street" knows nothing. Sometimes these individuals are very essential links in the scientific work going on in the hospital. In the last Report of the Municipal Hospitals of the City of Winnipeg, tribute is paid to one of these men behind the scenes, Mr. Ernest Richardson, for his long-continued and generous service on behalf of the sick.

"One of the most interesting and important contributors to the work of the Hospitals is the man, departmentally known as 'The Blood Man.'

"At the large and modern meat packing plant of Canada Packers Limited he collects and stores the fresh blood from which serum is syphoned for making blood cultures in the hospital laboratory.

"With the kind consent of his employers, but without any hope of personal reward, he has attended to this self-imposed task with unswerving regularity for upwards of fifteen years.

"We now pay tribute to a faithful associate and thank his employers for permitting him to collect and store in the proper place, until we can remove it, this necessary and important requisite of our laboratory."

* * *

Empty the Attic

The Home Secretary in Great Britain has issued an order making it imperative for all movable articles to be removed from attics in urban areas as a precaution against fires which may be caused by incendiary bombs. Although this does not apply to attic spaces furnished as living quarters, it does apply to the roof spaces in hospital buildings where there is no fixed staircase. Although we hope that incendiary bombs will never fall on hospitals in Canada, a somewhat similar order here would help to clear the attics of many hospitals and other public buildings of unnecessary rubbish.

Providing Medical Librarian at Low Cost

The medical library of Grant Hospital in Chicago is at one end of the commodious room used by the record librarians. These young ladies take charge of the library during the day and note any books or magazines borrowed by the staff doctors or interns. On a recent visit to this hospital we noted that it had been arranged to provide evening oversight for this medical library at low cost by having a student on duty from 6.30 p.m. to 10.30 p.m. for five nights a week. In return the student gets room, board and laundry free of charge.

* * *

Aiding Separate Nursery Technique

In the same hospital we noted a metal box somewhat longer and higher than a shoebox beside each bassinet in the nursery. The idea was to keep the thermometer, petrolatum and other articles required for the observance of separate technique in the baby's own box. Painted white like the bassinet, it was both practical and sightly.

* * *

Hospital Day Observance Increases

The committee on awards for the observance of National Hospital Day, which met during the Boston meeting last month, was overwhelmed with the many excellent reports of Hospital Day observance all over the continent. Some of the exhibits submitted by hospitals competing for the several beautiful cups and plaques reflected an enormous amount of effort. Profusely illustrated with photographs, clippings and with literature distributed, these artistically prepared outlines of Hospital Day programmes have achieved a degree of excellence never conceived by the original committee. A hospital must put on a real programme to win one of the prizes these days.

* * *

Early Author on Hospital Management

One of the first writers on the management of hospitals was Mr. Thomas Percival, a Manchester physician who is best known as the father of the modern medical codes of ethics. As early as 1771, he wrote on the internal regulation of hospitals. Later there was considerable confusion over the staffing arrangements at the Manchester Infirmary and, in 1791, Percival was requested by the Infirmary trustees to draw up a "scheme of professional conduct relative to hospitals and other medical charities". Printed privately in 1794, the monumental work was revised and made generally available in 1803.

* * *

Insurance Deductions for Evacuees

The Blue Cross, the hospital care insurance plan in Massachusetts, has announced a special $6 per year rate for all refugee children and a number are now being enrolled by their new guardians. The regular rate is $10 for an individual.

* * *

Preparedness

During the discussion on "Preparedness" at the Boston convention of the A.H.A., one of the speakers recalled a homemade sign noticed on a farmer's fence in the Kentucky hills:

"Trespassers warned to keep off this property. This notice will be prosecuted with a bulldog not overfriendly and one double-barrelled shotgun. Danged if I'm not gittin' tired of all this hellraisin'."

* * *

Breakfast for Hitler

A garden club in Boston recently exhibited a "Breakfast for Hitler" display which drew a great deal of attention. The "tasty" concoction consisted of a garland of deadly nightshade, poison ivy, bull thistle and thorns, which encircled a miniature skunk placed by the side of an old-fashioned moustache shaving cup. We would suggest that next time there be added some rattlesnake plantain, some yellow adder's tongue, the viper's bugloss, some lousewort in the corner, a little lambkill and near the ghostly corpse plant a tempting group of toadstools, preferably of the deadly *amanita verna* species, the "destroying angel".

Bassick

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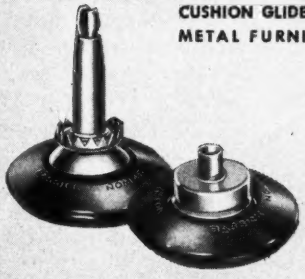

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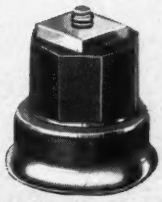

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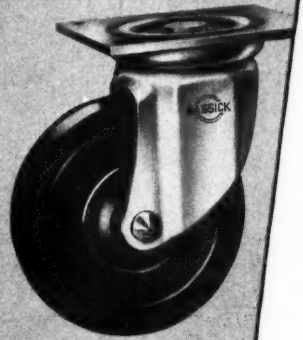

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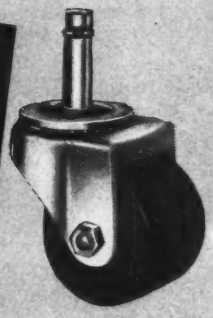

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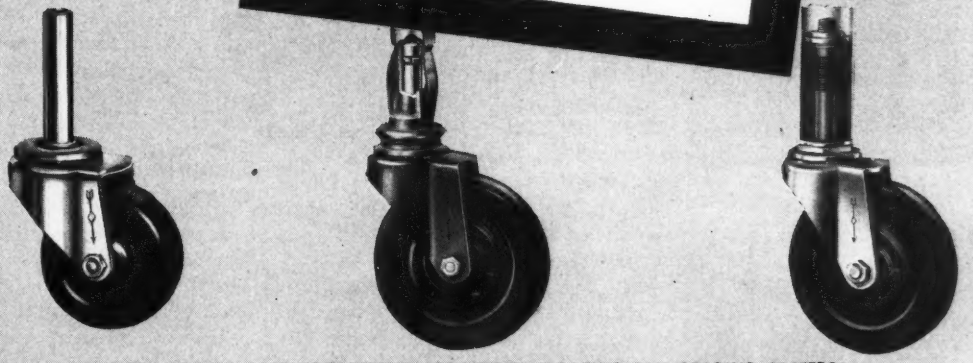

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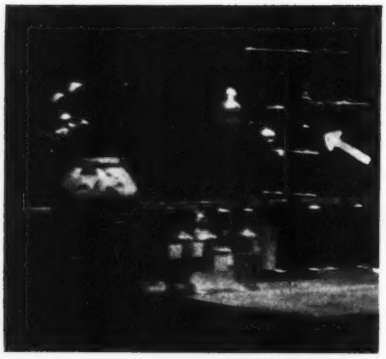
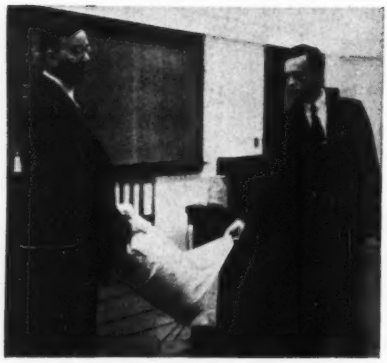
Striking Demonstration of Anaesthetic Hazards

Explosion Limits of Gases and Generation of Static

ONE of the outstanding sessions of the Boston convention of the American Hospital Association was a demonstration at the Massachusetts Institute of Technology by Professor J. Warren Horton, professor of biological engineering at M.I.T. Professor Horton had arranged a very ingenious piece of apparatus by which selected gases in varying percentages could be liberated as a bubble by gently liberating small amounts through a film over a miniature spark gap. Thus it was possible to test the explosibility of the gas in the bubble merely by closing a switch on the wall a few yards away. This is illustrated in the upper photograph which shows a bubble about to be exploded. The spark is clearly shown in the second photograph.





It was shown that ethylene in 85 per cent concentration will not ignite; below 80 per cent it will explode. A bubble of the concentrated vapour would not ignite; breaking the bubble with a pointer to admit more air immediately caused an explosion. It is concluded that there is greater danger of explosion outside of the rebreathing apparatus than within it. The addition of 10% nitrogen lowered the danger of explosion. Helium was less effective. Oddly enough the addition of 10 per cent hydrogen reduced the explosibility limits more than did nitrogen. A mixture of cyclopropane, ethylene and oxygen has an increased margin of safety over one of the gases alone with oxygen.

Electrostatic Discharges

A number of demonstrations were given to prove that it is the insulating substances that cause static by preventing neutralization. By the use of an electrometer it was shown that a single scrape of a foot could produce 200 volts. Pulling a slip off a pillow (lotus cloth), as in lower photograph, generated over 2000 volts! Actually an explosion was caused by one scrape of a foot.

Obviously insulating substances must be bridged. Intercouplers, grounding a patient on a sponge rubber mattress to the table helps, but tying people together may increase the hazard of grounding the group. Rubber mattresses on the O.R. table constitute one of the biggest hazards. The insulation and the movement of drapings may produce up to 5,000 volts. Mattresses with the new conductive rubber sheeting have little hazard.

Sharkskin uniforms were not recommended. Simply slapping a piece against the leg produced over 200 volts. On the other hand silk stockings are not a serious hazard, nor are rubber gloves. They develop a charge, but are so close to the skin that there is no spark.

Rubber casters, unless of the new conducting type of rubber, should be removed and chains affixed. Crepe rubber shoes also prevent dissipation of potential.

A well grounded floor is the best means of keeping down static. Brass grills are frequently used, but the squares are often too large, or the brass stripping may not be connected up, thus spoiling the effect. Floors of the new type of conducting rubber with copper or brass screening to connect the sections seem satisfactory. By stepping from a non-conducting piece to a conductive and grounded rubber mat, while connected to the sensitive galvanometer, the professor could demonstrate the complete discharge of his body static.

A good conductive floor may have the effect spoiled if it is waxed. As the resistance of terrazzo floors may vary from one megohm to over 300 megohms, a 2 to 4 per cent calcium chloride wash after scrubbing is of help.

It was pointed out, too, that a high humidity is not always a reliable safeguard. One fatality occurred with an R.H. of 65. Here it was probably due to the removal of the protective CO_2 from the air by the air conditioning unit.

	Explosive Limits with O_2	*Most Explosive*
Ether	**2.1 to 82%**	**3.5 to 7.5%**
Ethylene	**2.9 to 80%**	**27%**
Cyclopropane	**25 to 63%**	**20%**

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PROGRAMME

British Columbia Hospitals Association Convention
Empress Hotel, Victoria, B.C.

OCTOBER 15, 16 and 17

Tuesday, October 15th

Morning Session

9:00 a.m. Registration

9:30 a.m. Call to order by the President
Invocation.
1. Address of Welcome—His Worship Mayor McGavin, Mayor of Victoria. Hon. Geo. M. Weir, Provincial Secretary.
2. Reply to Address of Welcome by the President.
3. Annual Report of the President.
4. Report of the Treasurer.
5. Appointment of Committees.
6. Business arising out of last year's Convention.
7. Announcements.

Analysis of Reports, Percy Ward, Hospital Inspector.

Afternoon Session

2:00 p.m. President, J. O. Nicholls presiding.
"Canadian Hospitals After a Year of War", Harvey Agnew, M.D., Secretary, Canadian Hospital Council.
Reports of Regional Representatives.

Wednesday, October 16th

Morning Session

9:30 a.m. "Group Hospitalization—the Hospital Life Line", Geo. F. Stephens, M.D. President, Canadian Hospital Council, Supt. Royal Victoria Hospital, Montreal.
Reports of Regional Conference—Continued

Afternoon Session

2:00 p.m. Women's Auxiliaries
Mrs. Geo. Darby, President.
Questions and Discussion.
Nursing Section.
Miss Lena Mitchell, R.N., presiding.
Resume Proceedings Canadian Nurses' Association Convention as it Affects Hospital Administration.
Miss Allison Reid, R.N., B.Sc., Training School, Vancouver General Hospital..
Nursing Staff Hospitalization.
What part should Hospitals take in training Nursing Auxiliaries for War Service?
What should be done to maintain standards as a result of depletion of staffs and increasing demands on Hospital services?
Dr. Harvey Agnew to summarize findings relative to training nurses to give intravenous injections.

Thursday, October 17th

Morning Session

9:30 a.m. Round Table Conducted by G. Harvey Agnew, M.D., and Geo. F. Stephens, M.D.
Business Session
Report Resolutions Committee.
Elections of Officers.
New Business.

Afternoon Session

If business session not concluded.

Hospital Not Responsible for Injury to Delirious Patient

An action for $13,483 damages brought against St. Luke's Hospital, Montreal, was dismissed by Mr. Justice Alfred Duranleau in the Superior Court, September 25th. Rauol A. Crevier, plaintiff, had entered the hospital with an infected finger and while delirious, broke strong cotton tapes which bound him to his bed, broke away from a guard and dashed through a window falling twelve feet to a roof. Both legs were broken and Crevier charged the hospital authorities with negligence.

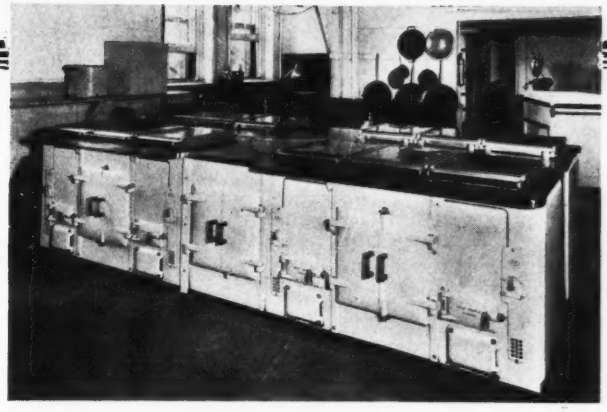
His Lordship held that all reasonable precautions had been taken and referred to the opinion of the physicians that the probable reason for the plaintiff's outbreak had been the sudden cutting off of liquor. The hospital had not been informed that the plaintiff was a chronic alcoholic.

Two Questions Involved

His Lordship said there were two questions to be answered. First, had the plaintiff established acts of negligence on the part of the hospital of a nature to involve the responsibility of the institution? Had the hospital omitted any measures commanded by science and the rules of prudence, and if such a measure had been taken, had they been properly applied? The Court was of the opinion that the proper measures had been adopted and carried out. The use of a straight jacket, it was felt, would not have been appropriate in the circumstances. The hospital was neither an insane asylum nor a refuge for neurasthenics but an institution where ordinary cases are treated and where ordinary measures are employed for the protection of delirious patients. The accident suffered by defendant was, therefore, due to circumstances for which the hospital could not be held responsible.

Graded Premiums Used By Edmonton Group Hospitalization Plan

Edmonton's group hospitalization scheme now has a net coverage of 8,704. This figure includes 4,315 employed subscribers, 2,562 dependents and 1,827 children under 15. Three premiums of 60c, 50c and 15c per month are levied according to the status of the beneficiary.



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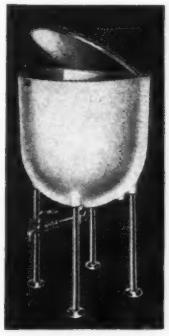

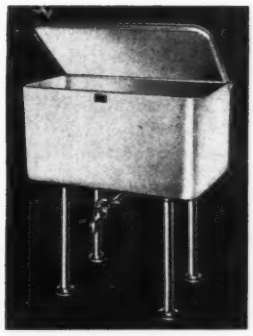

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Reducing the Hazards of Anaesthetic Explosion

The Quenching Value of Helium

IT is now a well established fact that at least the majority of cyclopropane, ether and ethylene explosions occurring during closed system anaesthesia are due to static. Static charges of considerable potential can readily be developed on objects and persons in the anaesthesia field through frictional contacts and movements.

From an electrical point of view it is the non-conductors in the room which constitute the hazards. As an example, non-conductive floors are an excellent source of static electricity, which static collects on objects sliding or scuffling over them and is then retained because the floor is an insulator.

The amount and potential of static charges arising in the operating room can be reduced by eliminating the use of such insulating or non-conductive materials. One should avoid *the use of any but* cotton materials (no wool and no silk) for clothing and drapes, and as an added precaution, suggested by Dr. Williams, one should rinse drapes and towels, after they have been laundered, in 0.5% calcium chloride solution. This decreases to about one-third the static potential which can be induced upon them by friction.

Prevent Building up of Potential

The surest means of preventing a spark discharge, states Dr. H. Sidney Newcomer of New York, in a review of newer advances, is to provide means of electrically intercoupling all objects which might otherwise acquire different potentials. This electrical binding together can obviously be accomplished with wires as in the case of the Horton intercoupler. A simpler methold is to provide more certain and automatic means of contact between every object in the anaethesia zone by introducing a common conductor such as a conductive floor and causing all objects to be in electrical contact with it. To make certain of electrical contact with it one should equip all personnel with conductive soles on their shoes and provide drag chains from instrument tables, operating table and anaesthesia machine to the floor. It is particularly important that the stool on which the anaesthetist sits should not have a rubber

(*Continued on page* 70)

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cover and should have electrical contact with the floor.

The patient should be grounded, as by a chain from the patient to the table, with a megohm resistance (obtained at a radio parts store) in series to protect the patient in case of accidental contact with the lighting circuit, cautery, etc. A more satisfactory coupling and one which provides additional protection by including other important elements of static hazard in the safety chain, is Dr. Connell's graphite twine. This has a high protective resistance in itself and spark discharge to it is impossible because the finely divided graphite only permits of invisible brush discharge and hence tends of itself to harmlessly discharge any accumulated static. This twine or cord should be tied to a naked bar on the operating table, tied to the anaesthesia machine and loosely looped to the wrist of the patient and anaesthetist.

Floor Treatment

One excellent means of making the floor conductive is by the use of a conductive rubber floor covering. One such floor covering comprises a sheet of conductive rubber floor material of fairly low resistance in which is imbedded a wire screen so as to ensure uniformity of conductivity throughout and provide a metallic surface to which a good ground contact can be made.

Where the operating room is already provided with terrazzo or tile floor in which a conductive metal grid has been inlaid, this floor may apparently be made sufficiently conductive by adopting the routine of finishing off the ordinary mopping operation with 4% calcium chloride solution. Even when dry to the touch the floor remains sufficiently conductive so that all objects in contact with it come to the same potential. This will help even without the grid, but properly grounding such a floor then becomes impossible and conductivity throughout is less certainly assured.

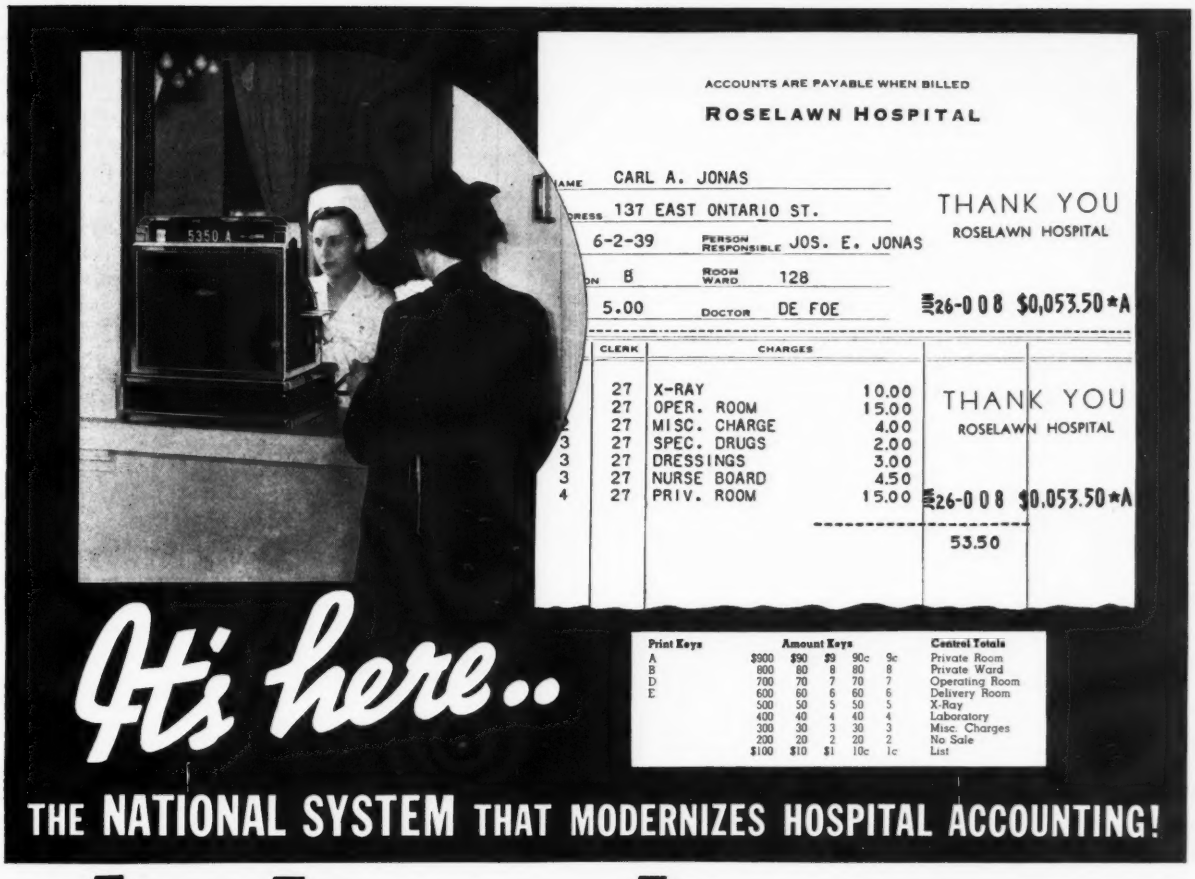
A drag chain consisting of a length of brass chain held at both ends so as to contact the floor for a foot or more of its length makes a satisfactory contacting arrangement from table, stool or anaesthesia machine to the floor. If a drag chain is not used the contact between a table and the floor can be made with a wet towel.

The production of conductive rubber soles for shoes is under investigation. The conductivity of ordinary leather soled shoes has been thoroughly investigated at the Massachusetts Institute of Technology. The soles of such shoes have been found to be a reasonably satisfactory substitute for conductive rubber soles. *Ordinary rubber soled shoes should not be used* as they perfectly insulate a person wearing them and enable and help the person to accumulate a considerable and dangerous charge.

Grounding the Patient

Means for including the patient in the intercoupling has been described. The establishment of this contact between the patient and the table (and hence the floor) is very important as otherwise the patient may be dangerously isolated from all other objects in the anaesthesia field, the rubber pad and the pillow otherwise having this dangerous insulating effect, an effect which it seems

(*Continued on page 72*)



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impossible to avoid by dispensing with their use, even though their presence, as non-conductive bodies, makes them a hazard because they are very potent generators of electricity.

The practice of always maintaining contact between the anaesthetist's hand and the patient's face, or when breaking such contact to re-establish it at a point distant from a possible leak at the mask, is a good one, as it has in the past, when rigidly practised, prevented possible sparking in the explosion zone. The anaesthetist should then observe like precautions in respect to his contact with the anaesthesia machine.

The gas hose and rebreathing bag are non-conductors and hence good sources of static when rubbed or manipulated. Several fatal explosions have originated in this way. Rinsing and dipping the gas bag and hose in calcium chloride solution is recommended as probably obviating this danger. Dr. Connell will presently have available conductive rubber rebreathing bags, hose and face mask which will completely eliminate this hazard. Moreover such conductive hose and mask will serve, as shown by Farrand, as an effective electrical intercoupler between the patient and machine; and hence also with the floor and the rest of the set-up as described above.

It had been thought that a high humidity would prevent accumulation of static, but a number of explosions have occurred with relative humidities above 65% and it has recently been shown that artificially conditioned operating rooms are more dangerous than non-conditioned rooms. This is due to removal of CO_2 by the air conditioning apparatus. It is the CO_2 in the wet atmosphere which makes it conductive (when it is conductive).

Action of Helium

Helium has a high thermal conductivity and quenching power on flame propagation in otherwise inflammable anaesthetic mixtures. A study by Jones et al has revealed that if cyclopropane, oxygen and helium be mixed, the cyclopropane concentration being 20-25 per cent, the oxygen concentration can rise to over 25 per cent before an inflammable mixture exists. Although ether mixtures have not been studied as thoroughly as have cyclopropane mixtures, it is known that in general the same data apply.

The application of the above described static control measures should go far toward eliminating explosions in anaesthesia apparatus. When supplemented with an understanding use of flame quenching methods (helium) the hazard will be much less than anything experienced in the past.

Finally, the all important question of fire and explosions due to defective wiring of house circuits and apparatus should be clarified. Mercury wall switches should replace ordinary snap switches, and three-wire polarized and locking outlets should be everywhere installed, the third wire being grounded, and all apparatus wired so as to ground the metal casing or shield to this pole, thus preventing accidental grounding of the power circuit to other objects, including the grounded floor. The fixtures herein mentioned are everywhere regularly stocked and apparatus can be so modernized by any competent electrician.

(See also article in this issue on the demonstration at the M.I.T. during the A.H.A. convention)

Maritime Conference of Catholic Hospital Association Meets in Glace Bay

THE sixteenth annual meeting of the Maritime Conference of the Catholic Hospital Association was held at St. Joseph's Hospital, Glace Bay, on August 21st and 22nd, 1940.

Greetings from the Diosese of Antigonish were extended by the Right Reverend James Morrison; from the Town of Glace Bay by His Worship Mayor D. W. Morrison, from the Parent Association by Reverend A. M. Schwitalla, S. J. St. Louis, Mo., and from the Medical Society by M. G. Tompkins, M.D., Dominion.

The splendid address by Reverend Doctor D. McCormack of St. Francis Xavier University, stressing the necessity and the aims of Adult Education, resulted in the following resolution:

WHEREAS the growing need of Adult Education has been stressed at this Convention; and

WHEREAS nurses properly instructed could do much to further this movement in their respective communities;

BE IT THEREFORE RESOLVED THAT A COMMITTEE of three be appointed from this Conference to work with Dr. McCormack of the St. Francis Xavier Extension Department, to formulate plans whereby the Hospitals might be used in the scheme of Adult Education, and to bring in a report at the next annual meeting.

A report from the Canadian Hospital Council was read by Mother M. Ignatius, who reviewed briefly the September 1939 Convention, and the activities of the Council since that time, calling attention to the important matters on which decisive action had been taken, including unemployment insurance and sales tax exemptions. The meeting felt that wholehearted thanks and active co-operation were due the Canadian Hospital Council, in view of the excellent services rendered, and the strong bulwark it provides in the solving of our many federal and provincial problems.

The proceedings of the convention were animated and enriched by the dynamic personality and wealth of experience of Reverend A. M. Schwitalla who was presented with a souvenir of his visit to Nova Scotia, token of the Conference's appreciation of his invaluable contribution to the convention.

Election of Officers

President: Sister John Baptist, Charlottetown; *Vice-president* — Sister Paul of the Cross, Glace Bay; *Secretary* — Sister Mary Ursula. *Convenor, Publicity Committee* — Sister Camillus de Lellis, Halifax; *Convenors of Nursing Education Committee* — Sister St. Stanislaus, Chatham, and Sister Mary Peter, Glace Bay, N. S., *Convenor of Legislative Committee* — Rev. John E. Burns, Ph.D.

Executive Committee—Mother Immaculata, Antigonish; Mother Ignatius, Glace Bay; Sister Anna Seton, Halifax; Sister Anne de Paredes, Moncton; Sister M. Michael, St. John; Sister Dugas, Tracadie; Sister Kerr, Campbellton; and Sister Augustine, North Sidney.

Have you renewed your subscription to THE CANADIAN HOSPITAL?

Medical Council of Canada Clears Way for Single Final Examinations

AT long last the way has been cleared for the solution of a problem that has been a bone of contention for many years. Medical students taking their final examinations from their respective universities have been required to go all through the process of being examined again, usually within two or three weeks and frequently by the same examiners, in order to take their licensing examinations. Prior to the establishment of the Dominion Medical Council in 1925, these examinations for the licence to practice were held by the licensing bodies, usually called the College of Physicians and Surgeons, in their respective provinces. Since that date the great majority of the medical graduates have taken the examinations of the Medical Council of Canada. Successful passage of these examinations has *ipso facto* given the right to practise in any province. The certificate of the M.C.C., when presented to the province of choice, is recognized by the provincial authorities as adequate qualification, provided that the educational background and other factors have met with approval of the provincial licensing body. It has been customary for the student to take out his enabling certificate on entering medical college and, in most provinces, this period of advance registration is required.

By this new arrangement, the graduating student would take but one examination. The university examiners would mark the papers. If satisfactory, the papers would be sent on to the Medical Council of Canada for its marking; if unsatisfactory they would not be sent on. For the oral examinations the examiners would be representatives of the Medical Council who would be acceptable to the university—really a joint board. The marking would be considered first from the university viewpoint and then, if the student be successful in passing his examination, from the standpoint of the M.C.C. The essential point to be overcome has been the necessity that the applicant be a graduate before receiving the Medical Council of Canada certificate. It now remains for the various medical colleges to make application for this privilege.

The fee for the Council examinations has been reduced from $75 to $50 (it was $100 until 1932) and the examinations will now be held early in May instead of at the end of the month.

This development is very pleasing to Dr. E. Stanley Ryerson of the University of Toronto, the new President of the Medical Council of Canada, who has been campaigning for this reform for some 13 years. He succeeds the retiring President, Dr. P. A. MacLennan of Vancouver.

Mr. A. W. Smith to Montreal

Mr. A. W. Smith, formerly of the Riverdale Isolation Hospital, Toronto, and secretary of the Toronto Hospital Council, has taken over his duties as Assistant to the Superintendent at the Royal Victoria Hospital, Montreal.

McGill Teaching Hospitals Revise Pharmacopoeia

The 4th edition of the Pharmacopoeia and Clinical Methods of the Teaching Hospitals, McGill University, has been released. Since its first publication in 1925, this compact little volume has enjoyed wide popularity among the staff doctors, interns and nurses of hospitals all over Canada. In this revision new material has been added on the newer insulins, a glossary of the hormones has been added to the section on organ extracts, and new data have been added on the use and dangers of the sulphanilamides. Much valuable information on laboratory methods and readings is included in the text. A new section on methods for use in the radiological department has been added.

Appointments and Resignations

Mrs. Margaret L. Boehner, Reg. N., formerly night supervisor at the Welland General Hospital, has been appointed superintendent of the Strathroy General Hospital, Ontario, to succeed Mrs. Nellie Malone.

Mr. W. E. Leonard, is the new superintendent at the Toronto East General Hospital. Mr. Leonard was with the Lockwood Clinic, Toronto.

Book Reviews

DERMATOLOGY AND SYPHILOLOGY FOR NURSES. John H. Stokes, M.D., Professor of Dermatology and Syphilology, School of Medicine and Professor in the Graduate School of Medicine, University of Pennsylvania. 365 pages. Price $3.35. W. B. Saunders Company, London and Philadelphia. McAinsh & Co. Limited, Toronto. 1940.

From the viewpoint of diagnosis of skin conditions this book does not attempt to be an atlas, as the reproduction of adequate coloured plates would be too expensive for a volume of this type. Emphasis is laid upon nursing care, and tables and box inserts are well used to clarify descriptions of nursing care, treatment and management. The final section on the principles of social hygiene is particularly helpful.

* * *

PSYCHIATRY FOR NURSES. Louis J. Karnosh, B.S., Sc.D., M.D., Associate Clinical Professor of Nervous Diseases, School of Medicine, Western Reserve University, Cleveland, and Edith B. Gage, R.N., Supervisor, Neuropsychiatric Division, City Hospital, Cleveland. 327 pages (illus.) Price $3.25. C. V. Mosby Company, St. Louis. Canadian Agents: McAinsh and Co. Limited, Toronto. 1940.

The authors of this volume on psychiatry have kept in mind the needs of the nursing student who must familiarize herself quickly with the symptoms, terminology and treatment of the more common forms of mental illness, and who must at the same time keep in mind the importance of treating the whole personality of the patient. Case histories have been used to enliven the text and to emphasize the importance of the life history of the psychotic person in an understanding of the many factors to be considered when dealing with a mentally ill patient.

* * *

A TEXTBOOK OF SURGICAL NURSING. Henry S. Brookes, Jr., M.D., Instructor in Clinical Surgery, Washington University School of Medicine, and Pearl Castile, R.N., A.B., M.A., Assistant Director, Training School for Nurses, University of California. 2nd ed. 663 pps. Illus. Price $4.00. C. V. Mosby Company, St. Louis. Canadian Agents: McAinsh and Co. Limited, Toronto. 1940.

The new edition of this very well prepared book brings up to date a volume which covers exceedingly well the broad subject of surgical nursing. The work has been written from a practical angle and constantly emphasizes nursing procedures. At the same time it gives a reasonable amount of space to the clinical aspects of a number of the more common surgical conditions. The copious illustrations are well selected and reproduced, the numerous headings facilitate reading of the volume and the book itself is an excellent example of high quality book making. This book can be recommended for the training school and as a text.

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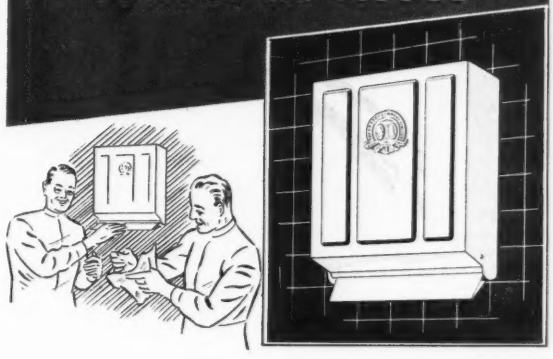

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Hospital Trustees Celebrate Golden Wedding

Mr. and Mrs. R. H. Cameron of Toronto celebrated their golden wedding anniversary in Toronto in September. Mr. Cameron, who is a prominent manufacturer and was for many years an alderman and then controller in Toronto, is a former president of the Ontario Hospital Association. Mrs. Cameron was long active on the board of the Women's College Hospital and is now its honorary vice-president.

James McKenty, M.D.

Dr. James McKenty, one of the foremost surgeons of western Canada, died in Winnipeg, August 11, 1940. A native of Ontario and a graduate of Queen's University, Dr. McKenty moved to Winnipeg in 1902. He was well known for his interest in medical education and hospital administration, and served for many years on the staffs of St. Boniface, Misericordia and St. Joseph's hospitals.

Mrs. T. W. Walker Mourned

The many friends of Dr. T. W. Walker, Superintendent of the Royal Jubilee Hospital, Victoria, B.C., and formerly of Saskatoon, will be grieved to hear of the sudden and unexpected death of Mrs. Walker on September 18th following a three days illness from a virulent form of influenza.

Past Performance—Present Needs —Future Possibilities

(*Continued from page* 32)

the new wing. An air conditioning unit serves the surgical suite and the separate exhaust ventilation system, which draws the air from near the floor level of these rooms, ensures the removal of any dangerous accumulation of explosive anaesthetic gases. The relative humidity of the air supplied can be maintained at any level desired.

Obstetrical Suite

Located on the third floor in the north projection of the new wing, the fine new obstetrical suite is well shut off from other parts of the hospital and this isolation is supplemented by the use of much sound absorbing material.

The construction of the new buildings at Belleville Hospital is of such a nature that the temperature on the inside of the outside walls, windows and roof will be maintained at a higher level in winter time and at a lower level in summer than is the case in buildings and hospitals of the ordinary types of construction commonly used.

Power and Light

With their associated consulting engineers the architects have made provisions for the more efficient production of the heat required from the power plant. Because of care given to this subject, it is interesting to note that, in spite of the greatly increased size of the hospital, the cost of light and power is now actually lower than it was on the original basis of power supply.

New Isolation Department

A mutually beneficial agreement

(*Continued on page* 80)

has been entered into between the City of Belleville and the Hospital Board whereby the first floor of the old east wing has been entirely replanned and refinished to provide an isolation department for the accommodation of city cases, but operated as part of the hospital services.

A separate entrance to this department is provided in the short extension built at the north end of this east wing.

The Nursery

This department is located in the roof space of the old central building. Glass partitions separate the rooms, including the cubicles in the isolation room, and the nursery entrance vestibule. The acoustic treatment of the ceiling over the whole area is supplemented by a carefully constructed sound stopping barrier at the partition separating this department from the main corridor outside.

Dietetic Services

One of the most difficult undertakings, so far as the administration of the hospital was concerned, was the replanning and re-equipping of practically the whole food service in the same area of the old hospital building while that service had to be kept continuously in operation.

The old dining room for nurses was enlarged and refinished; there was also developed a separate dining room for help; an office for the dietitians; servery for nurses' dining rooms; enlarged and remodelled cold storage department; new food stores out of what was an open court; and new cooking and servicing equipment.

Special attention has been given to the installation of very thick insulation all over the roof and exposed walls and windows have been double glazed and weatherstripped, all with the same objectives in mind as were outlined in connection with the construction of the new wing.

By purchasing and remodelling the residence adjacent to the hospital property as a nurses' home, (No. 2 on Fig. 3), additional accommodation for 32 nurses and a suite for the supervisor of nurses' training were thus obtained, together with ample space for lectures, laboratory and demonstration work.

Expenditures on Development

New Wing		$123,000.00
Power plant, new boiler, stoker, incinerator, pumps, and other equipment, coal vault, additions to building and power transformers		20,000.00
New elevator and repairs to old and to dumb waiter		7,000.00
Alterations and remodelling hospital buildings		56,000.00
Purchase of property for nurses' residence and remodelling of building		21,000.00
		227,000.00
Equipment, furnishings, furniture, linoleum, refrigeration plant, lighting fixtures, sterilizers and sundries		40,000.00
Professional service		15,000.00
		$282,000.00

Royal Jubilee Hospital Adds Vital Addition

(*Continued from page* 41)

follows: ultra violet 885; ionization 181; kromar 154; massage 999, exercises 153; pavex 487; electrocardiograms 242; infra red 2,479; diathermy 13; inductotherm 1,976; faradic 41; autocondensation 13 and surgical diathermy 1.

It is believed that this record is one of the best for an institution of this size in any part of Canada. The record also discloses that there has been an increasing use of X-radiation in the treatment of various inflamatory processes. The result has been to shorten the period of hospitalization for many of these cases.

This department is also co-operating to the fullest extent with the Department of National Defence by giving radiographic examinations of the chests of all recruits.

In many ways such as already illustrated the institution is developing along definite lines, and the advancements that have been made are a credit to the directors who serve the institution without thought of remuneration.

Blood Transfusions and the Use of Stored Blood

(*Continued from page* 38)

collecting must be observed as in any other operation. Pressure of 100 to 110 mm. Hg. is applied by the tourniquet, a small wheal is produced with 1% novocaine over a prominent vein, and a small incision made just through the skin. It is not permissible to cut down on a donor's vein. All articles necessary for the operation are contained in the blood withdrawal set. Attached to each flask are two pilot tubes, one of which contains sodium oxalate crystals. Into each is put about 5 c.c. of blood. These pilot tube specimens are used in the laboratory for serological tests, bacteriological examinations, typing and subsequent cross-matching. It is very important that these do not become confused with pilot tube samples from another donor. The collecting flask contains 200 c.c. of an anti-coagulant solution made up as follows, according to the formula of Maizels[8].

(*Continued on page* 84)

Sodium citrate	10.5 g.
Sodium chloride	4.3 g.
Distilled water	1000 c.c.

400 c.c. of blood is delivered below the fluid surface, and not allowed to run down the wall of the flask. At the same time the flask is gently rotated to mix the inflowing blood and anti-coagulant. Now the tourniquet is released and a sterile pad strapped over the puncture wound. The cotton plug is replaced in the flask. Pilot tubes are placed in the cotton holder and tied to the flask. A "Blood for Storage" form is filled out and attached. Instruments and linen are cleared away ready for the next donor.

At the conclusion of blood letting the donor is wheeled on a stretcher into another room and left there prone until the next collection is completed, or for ten minutes. The donor who has just given blood should be provided with a drink of water. He is allowed to sit up, rise, and resume his clothing under observation of an orderly. He may then go home.

All flasks of blood, with fully completed form and pilot tubes, are received as soon as possible after collection in the department of pathology for storage in the refrigerator. Within 24 hours of receipt the group of each specimen of blood stored is determined and a serological reaction for syphilis carried out. A bacteriological culture may also be made. After all necessary tests have been concluded the flask of blood with attached test tubes is labelled and placed in the proper compartment of the refrigerator for use when required. A complete record of all information in connection with each flask of blood stored is made in the office.

DEBIT AND CREDIT RECORD

PHYSICIAN	HOUSE PHYSICIAN	PATIENT	WARD	TR. DATE	DONOR	COLLECTION DATE
A. B. Smith	Sinclair	Carl Penner	H	23/3/40	Chas. Ness	26/3/40
McKay	Britt	Jacob Roddell	B	28/3/40	No Money—No Friends	
Young	Dryfus	Helen Ball	1211	29/3/40	M. J. Ellis PD	2/4/40
Campbell		N. Shaw	J		G. Sibley	23/3/40

(a) Carl Penner used blood from bank, and his friend Chas. Ness gave his to replace it.
(b) J. Roddell had no money or friends so was a debit to the bank.
(c) H. Ball paid for blood so a professional donor was called to replace it.
(d) A credit to the bank. Fred Gib donated blood to bank for Robert Baber, but a transfusion was not necessary.
(e) G. Sibley donated blood for N. Shaw. It was not used, but Shaw is still in hospital and it is not marked as a credit to the bank until he leaves.

Issuing the Blood

Flasks of stored blood are issued usually in order of receipt.

(*Continued on page* 86)

The request for issue form is sent to the office of the department of pathology as early as possible before the blood is wanted. This form must be carefully completed by the physician making the request. Blood cannot be issued until it has been so received.

At the same time the recipient's blood is sent to the laboratory for grouping and cross-matching. For this purpose two tubes are required, (1) containing 4 c.c. of whole blood, (2) containing 0.5 c.c. of blood in 2 c.c. of citrated salt solution.

At night stored blood is issued by the supervisor of nurses on duty, who is authorized to give the blood required only after it has been matched with that of the prospective recipient.

At other times, when the regular office staff of the department is not on duty, blood may be issued by the resident physician on laboratory duty.

Administration

There are no special features in the administration of stored blood except that filtration is necessary, and that it must be given slowly. It should not be artificially heated.

Results

In the first six months of operation of the blood bank at the Toronto Western Hospital, 320 collections were made and 284 transfusions of stored blood given. Cultures were all sterile. In only one has there been a positive serological test for syphilis. The average length of time in storage has been 6.3 days. The oldest used was in the refrigerator for 32 days. Two were given at 18 days and one at 16 days without any ill effects to the patient.

There have been mild reactions in nine cases. Seven of these were "chilly" sensations. In only one was there fever and in one urticaria. This gives a maximum percentage of about 3.0.

Observations

The operation of a blood bank is only possible in a fairly active hospital with 300 beds or more. Small hospitals in small centres have to rely on securing donors locally for direct or indirect transfusion. It is not easy to arrange for the transportation of stored blood for any considerable distance.

A recent further development in storage is likely to prove of value for such institutions. This is the use of stored plasma. Plasma may be separated from stored blood and kept indefinitely in ordinary refrigerators, or even at room temperature. It is of value in most of the cases in which blood is used. It may be given intravenously, as normal salt solution is given, without any of the grouping and matching necessary before blood transfusion. Since it keeps well in liquid form (or dried) it may be transported for considerable distances where its use is desired.

The use of stored blood as described above, and the use of stored plasma are proving of great advantage to hospitals in which transfusions are being given frequently in emergencies at any hour.

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7. The Therapy of the Cook County Hospital Bulletin C, May, 1937: and Bulletin C, Feb. 23, 1938.
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if not likely able to collect, the hospitals should apply for city or county assistance. The short period of time which elapses between admittance and financial inquiry does not allow accounts to run up as in the past. This splendid service is given by the Bureau without any charge to the hospital. If the hospital is still in doubt in any case, more information can be secured from the Bureau at the following cost:

For a minimum credit report — 25c.

For a complete written report — $1.

The Bureau will add to its information the names on all hospital accounts turned over to them which are 60 days or more in arrears, so that when the patient enters another hospital before having finished paying for the first hospital charges, the second hospital may be advised. By this, one can readily see the advantages to the hospitals when they turn over their accounts within 60 days.

The members of the Council will use on their letterhead "Members of the Toronto Hospital Council Credit Bureau"; also, they will have signs placed in the cashier's office, or wherever accounts are settled, stating that the hospital is a member of the Toronto Hospital Council Credit Bureau and all accounts not paid up in full within 60 days will be turned over to the Bureau.

The bureau will use separate stationery, approved by the Toronto Hospital Council. Telephone listing will be made in the telephone directory under the name of the Toronto Hospital Council Credit Bureau. The system of collecting used will be of a personalized nature and at all times the collection will be done under the name of the Toronto Hospital Council Credit Bureau.

After an account is decided to be hopeless, perhaps after legal action, the case will be forwarded to the hospital superintendent with a written statement as to how collection procedure was carried out and the results; such a statement, it is considered, would be quite satisfactory to the auditors of the hospital.

Returns will be made to each hospital weekly, half-monthly, monthly, or whatever time is most suitable to the hospital. The returns can be for the full amount collected; if such a system is adopted the hospital will then issue a cheque to the Bureau for commission charges and any credit or legal fees. Some hospitals do not like to receive returns this way and would request that their cheque cover just what is due them. The Bureau will keep each hospital's accounts and business transactions separately. The figures for each hospital are to be treated confidentially.

A check-up on all pay admissions and the systematic follow-up of collections should improve the financial position of hospitals, without a doubt, and be a step towards overcoming their deficits.

The credit manager and collection department still must continue their splendid fight to keep down the write-offs, but they should find that the Bureau will, as time goes on, make their task of collection easier. The hospitals are to-day, without a question, rendering the finest service to mankind that medical history has seen; they deserve to collect the rates charged, rates which, in a great number of cases, do not cover the actual cost.